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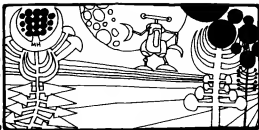
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**TED  
WHITE**

## **EDITORIAL**



SORRY FOLKS, BUT WE'RE A LITTLE LATE. . .

As I write this it's mid-July and the Dog Days are with us a little early this year: the greater Washington, D.C. area is swamped (and that's the word I want) with a wave of heat and humidity which the local weather bureau describes as "equitorial."

In coincidental conjunction with these weather conditions comes the word that in changing typesetters and trying to match typefaces and all that, we miscalculated. I am reliably informed that six pages are left in this issue for this editorial *and* our letters column. And this isn't counting *The Science in Science Fiction*, which I'd scheduled to return to this issue after a two-issue absence. It's Dave Book's last solo contribution (Benford will continue the column himself in times to come) and it simply wouldn't fit—not even if we knocked out *The Future in Books*, which has also been waiting for an opening for several issues.

It all boils down to what the late John Campbell was fond of reminding his readers: type is not elastic—or, at any rate, not elastic enough. Our sister magazine, *FANTASTIC STORIES*, suffered the same fate with its October issue. I hope we'll have these new bugs

cleared up next issue and can return to something approaching normal.

In the meantime, a few comments on this issue. The cover this issue, as with last issue, is by Don Davis, whom I mentioned some months ago. A protege of Chesley Bonestell, he was brought to my attention by Greg Benford who heard of him from Bonestell. Greg personally commissioned the two paintings we've published here, and owns the originals. I'm enormously pleased to be able to present Don's debut work here, and I imagine you'll be seeing his work on the covers of other sf magazines just as soon as the word gets around. He is one of a very few artists both capable of and willing to work within a "hard science" framework of realism, and from my correspondence and telephone conversations with him I've been impressed with his creative imagination as well. Don is still in his teens; his future looks bright indeed.

Two other newcomers to these pages will be found in *The Future In Books*. Thomas Monteleone has been a recent attendee at the Guilford Conference work-sessions and has sold us two stories which will be upcoming, as well as making several recent sales to

(continued on page 118)

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# ON THE LAST AFTERNOON

JAMES TIPTREE, JR.

*What can you say about a James Tiptree story? That it will be almost painfully human and involving? That out of a mass of the clichés which have been built up to embody what we call "science fiction" Tiptree will select and solidify old ideas and concepts and imbue them with a new relevancy and meaning? That he tells one hell of a fine story, any way you slice it? Try this one, about an alien, its relationship with the human colonists on its planet, and their chances for survival—*

Illustrated by DAVE COCKRUM

"YOU'LL HAVE TO HELP US," Mysha said painfully. "One last time. You can do it, can't you?"

The *noion* said nothing. It hung on its stalk as it had hung since he first found it here in the headland grove: A musty black indescribably shabby object or entity, giving no more sign of life than an abandoned termite nest. No one but he believed it was alive. It had not changed in the thirty years of the colony's life, but he had known for some time that it was dying.

So was he. That was not the point, now.

He pulled himself up from the case of tapes and frowned out over the mild green sea, rubbing his wrecked thigh. The *noion's* grove stood on a headland beside the long beach. To the left lay the

colony's main fields, jungle-rimmed. Below him on his right were the thatch roofs of the colony, the holy nest itself. Granary, kilns, cistern, tannery and workshops, the fish sheds, the dormitories and the four individual huts, one his and Beth's. In its center was the double heart, the nursery and the library-labs. Their future and their past.

The man Mysha did not look there now, because he had never stopped looking at it. Every brick and ditch and pane and wire was mapped in his inner eye, every cunning device and shaky improvisation, every mark of plan or accident down to the last irreplaceable component from the ship whose skeleton rusted at the jungle's edge behind him.

Instead he gazed out, beyond the people laboring and splashing on the jetty in the bay, beyond the placid shoals that stretched to a horizon calm as milk. Listening.

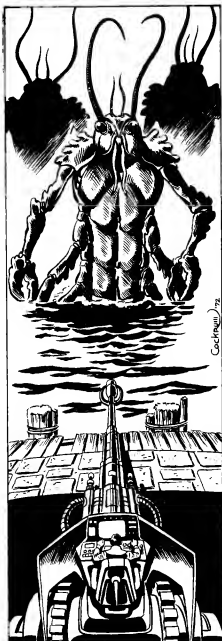
Faintly he heard it: a long sourceless whistle.

They were out there. Out beyond the horizon, where the world-ocean crashed forever on the continent's last reefs, the destroyers were gathering.

"You can do it one last time," he told the *noion*. "You must."

The *noion* was silent, as usual. He made himself stop listening, turned to study the sea-wall being built below him. A cribbed jetty had been laid from the headland, slanting out across the shoals to meet a line of piling coming from the far side of the colony beach to form a broad arrowhead pointing at the sea. Shelter for the colony. In the unfinished apex gap brown bodies strained and shouted among rafts piled with rock. Two pirogues wallowed, towing cribs. Another work-team splashed toward the pilings pulling a huge spliced beam.

"They can't finish in time," he muttered. "It won't hold." His eyes roved the defense-works, reviewing for the thousandth time the placing of the piles, the weak points. It should have been in deeper water. But there's been no time, it was all too late. They wouldn't believe him until the





stuff had started washing ashore.

"They don't really believe yet," he said. "They aren't afraid."

He made a grimace of pride and agony, looking now at the near beach where boys and girls were binding logs with vine-ropes, assembling the cribs. Some of the girls were singing. One boy jostled another, who dropped his end of the log, tumbling them both. Hoots, laughter. *Get on with it, get on with it.* He groaned, pounding his broken thighs, watching old Tomas fussing them back to work. Tomas would outlive him if they survived, if any of them survived what was coming. He groaned again softly. His beloved ones, seed of his race on this alien world. Tall, unfearing, unscarred as he had never been.

"Man is an animal whose dreams come true and kill him" he told the *noion*. "Add that to your definitions. You could have warned me, you know. You were here before, you knew. You knew I didn't understand."

The *nolon* continued silent. It was very alien. How could it grasp what this haven had meant to them, thirty years ago? This sudden great pale clearing at the last edge of the land, and they roaring down to death on the rocks and jungle in their crippled ship. At the last minute of their lives this place had opened under them and received them. He had led the survivors

out to bleed thankfully into the churned sand.

A tornado, they decided, must have swept it bare, this devastated square mile stretching to the sea. It had been recent; green tips were poking up, fed with fresh water from an underground flow. And the sand was fertile with organic mulm, and their wheats and grasses grew and the warm lagoon teamed with fish. An Eden it had been, those first two years. Until the water—

"Are you not . . . mobile?" The *noion* had spoken in his head suddenly, interrupting his thought. As usual it had "spoken" when he was not looking at it. Also as usual its speech had been a question.

From long habit he understood what it meant. He sighed.

"You don't understand," he told it. "Animals like me are nothing, in our selves, without the accumulated work of other men. Our bodies can run away, yes. But if our heritage here is destroyed those who survive will be reduced to simple animals using all their energy to eat and breed. The thing that makes us human will be lost. I speak with you as a rational being, knowing for example what the stars are, only because the work of dead men enables me to be a thinker."

In fact, he was not a thinker, his inmost mind commented sadly; he was a builder of drainage lines

now.

The *noion* emanated blankness. How could it understand, a creature of solitary life? Hanging forever on its limb, it was more impressed with his ability to move his body than with anything in his mind.

"All right," he said. "Try this. Man is a creature that stores time, very slowly and painfully. Each individual stores a little and dies leaving it to his young. Our colony here is a store of past time." He tapped the box of tapes on which he rested.

"If that generator down there is destroyed, no one can use the time-store in these. If the labs and shops go, the kilns, the looms, the irrigation lines and the grain, the survivors will be forced back to hunting roots and fruits to live from day to day. Everything beyond that will be lost. Naked savages huddling in the jungle," he said bitterly. "A thousand years to get back. You have to help us."

There was silence. Over the water the eerie whistling suddenly rose, faded again. Or did it fade?

"You do not . . . ripen?" The *noion's* "words" probed stealthily in his mind, pricked a sealed-off layer.

"No!" He jerked around, glaring at it. "Never ask me that again! Never." He panted, clenching his mind against the memory. The thing the *noion* had shown him,

the terrible thing. No. No.

"The only help I want from you is to protect them," He built intensity, flung it at the *noion*. "One last time."

"Mysha!"

He turned. A leathery little woman toiled up the rocks toward him, followed by a naked goddess. His wife and youngest daughter, bringing food.

"Mysha, are you all right up here?"

Bethel's sad bird-eyes boring into his. Not looking at the *noion*. He took the gourd, the leaf-wrapped fish.

"What I'm doing you can do anywhere," he grumbled, and repenting touched her sparrow wrist. The glorious girl watched, standing on one leg to scratch the other. How had these supernatural children come out of Bethel's little body?

It was time to say some kind of goodbye.

"Piet is coming to take you inland," Bethel was saying. "As soon as they get the laser mounted. Here's your medicine, you forgot it."

"No. I'm staying here. I'm going to try something."

He watched her freeze, her eyes at last flicking to the silent brown thing hanging from its branch, back again to him.

"Don't you remember when we came here? This grove was the only

untouched place. It saved itself, Bethel. I can make it help us again this time."

Her face was hard.

"Beth, Beth, listen." He shook her wrist. "Don't pretend now. You know you believe me, that's why you're afraid."

The girl was moving away.

"If you don't believe me, why wouldn't you let me love you here?" he whispered fiercely. "Melie!" he called. "Come here. You must hear this."

"We must go back, there isn't time." Bethel's wrist jerked. He held it.

"There's time. They're still whistling. Melie, this thing here, you've heard me call it the *noion*, it's alive. It isn't native to this planet. I don't know what it is—a spore from space, a bionic computer even maybe—who knows. It was here when we came. What you must know, you must believe is that it saved us. Twice. The first time was before any of you were born, the year when the wells went dry and we almost died."

The girl Melie nodded, looking composedly from him to the *noion*.

"That was when you discovered the blackwater root," she smiled.

"I didn't discover it, Melie. No matter what they tell you. The *noion* did it. I came up here—"

He glanced away for an instant,

seeing again the stinking mud-flats where the lagoon was now, the dry wells, the jungle dying under the furnace that poured white fire on them week after parching week. That had been the year they decided it was safe to breed. Bethel's first child had been lost then along with all the others, dessicated in the womb.

"I came up here and it felt my need. It put an image in my mind, of the blackwater roots."

"It was your subconscious, Mysha! It was some memory!" Bethel said harshly. "Don't corrupt the girl."

He shook his head tiredly. "No. No. Lies corrupt, not the truth. The second time, Melie. You know about the still-death. Why we don't use the soap after the wheat has sprouted? When Piet was a baby..."

The still-death . . . his memory shivered. It had hit the babies first. Stopped them breathing, with no sign of distress. Martine's baby started it, she'd seen the bubbles stop moving on its lips while it smiled at her. She got it breathing again, and again, and again, and then in the night Hugh's baby died.

After that they watched constantly, exhausted because it was harvest time and a smut had damaged the wheat, every grain had to be saved. And then the adults started to drop.

Everybody had to stay together

then, in pairs, one always watching the other, and still it got worse. The victims didn't struggle, those who were brought back reported only a vague euphoria. There was no virus; the cultures were blank. They tried eliminating every food. They were living only on water and honey when Diera and her husband died together in the lab. After that they huddled in one room, still dying, and he had broken away and come up here—

"You were in a highly abnormal state," Bethel protested.

"Yes. I was in a highly abnormal state." On his knees here, cursing, his need raging at the *noion*. What is killing us? What can I do? *Tell me!* The broken gestalt of his ignorance clawing at the *noion*.

"It was the need, you see. The urgency. It—somehow, it let me *complete* myself through it. I can't describe it. But the fact remains I learned what to do."

Adrenaline, it had been, and febrifacients, and making them breathe their own carbon dioxide until they choked and choked again. He had come down from the hill and thrust his baby son's head in a plastic bag with Bethel fighting him.

"It was the enzyme in the soap," said Melie calmly. She cocked her head, reciting. "The-soap-traces-potentiate-the-ergot-in-the-wheat-smut-resulting-in-a-stable—uh—choline-like-molecule-which-

passes-the-blood-brain-barrier-and-is-accepted-by-the-homeostats-of-the-midbrain." She grinned. "I really don't understand that. But, I mean, I guess it's like jamming the regulator on our boiler. They didn't know when they had to breathe."

"Right." He held Bethel more gently, put his other arm around her thin rigidity. "Now, how could that have possibly come out of my mind?" The girl looked at him; he realised with despair that to her there were no limits on what he might know. Her father Mysha, the colony's great man.

"You must believe me, Melie. I didn't know it. I couldn't. The *noion* gave it to me. Your mother won't admit it, for reasons of her own. But it did and you should know the truth."

The girl transferred her gaze to the *noion*.

"Does it speak to you, Father?"

Bethel made a sound.

"Yes. In a way. It took a long while. You have to want it to, to be very open. Your mother claims I'm talking to myself."

Bethel's mouth was trembling. He had made her come here and try once, leaving her alone. Afterwards the *noion* had asked him, *Did anyone speak?*

"It's a projection," Bethel said stonily. "It's a part of your mind. You won't accept your own insights."

Suddenly the whole thing seemed unbearably trivial.

"Maybe, maybe," he sighed. "*Bethink ye, my lords, ye may be mistaken.* . . . But know this. I intend to try to get its help once more, if the beasts break through. I believe it has the strength to do it just once more. It's dying, you see."

"The third wish." The girl said lightly. "Three wishes, it's like the stories."

"You see?" Bethel burst out. "You see? It's starting again. Magic! Oh, Mysha, after all we've been through—" Her voice broke with bitterness.

"Your mother is afraid you'll make a religion out of it. A fetish in a carved box." His lips quirked. "But you wouldn't believe a god in a box, would you, Melie?"

"Don't joke, Mysha, don't joke."

He held her, feeling nothing. "All right. Back to work. But don't bother trying to move me, tell Piet to use the time for another load. You have the lab packed, haven't you? If they get through there won't be any time."

She nodded dumbly. He tightened his arms, trying to summon feeling.

"Dying makes one cantankerous." It was not much of a goodbye.

He watched them going down the hill, the girl's peachbloom buttocks gliding against each

other. The ghost of lust stirred in him. How solemn they had been, the elaborate decisions about incest. . . . That would all go too, if the sea wall failed.

Figures were swarming over the water-tower now, mounting the old wrecking laser from the ship. That was Gregor's idea; he'd carried all the young men with him, even Piet. True, the laser was powerful enough to strike beyond the wall—but what would they aim at? Who knew where the things' vital centers were? Worst of all, it meant leaving the generator, all the precious energy-system in place.

"If we lose we lose it all," he muttered. He sat down heavily on the tapes. The pain in his groin was much worse now. Bethel, he thought, I've left them a god in a box after all, if the generator's smashed that's all these tapes will be.

The box held the poetry, the music that had once been his life, back in another world. The life he had closed out; his own private meanings. Abandoned it gladly for the work of fathering his race. But after his accident he had asked Piet to lug these up here, telling the *noton*, "Now you will hear the music of my race." It had listened with him, often the whole night through, and sometimes there seemed to be a sharing. . .

He smiled, thinking of alien

communion in the echoes of music from a brain centuries dead and parsecs away. Below him in the bay he saw the last rocks were being offloaded, into the apex cribs. All the young ones were out there now, lashing a huge hawser in the outer piles.

Suddenly the sea-wall looked better to him. It was really very strong. The braces had gone in now, heavy trunks wedged slanting into the rock. Yes, it was a real fortress. Perhaps it would hold, perhaps everything would be all right.

I am projecting my own doom, he thought wryly. His eyes cleared, he let himself savor the beauty of the scene. Good, it was good; the strong young people, his children with unshadowed eyes. . . He had made it, he had led them here out of tyranny and terror, he had planted them and built the complex living thing, the colony. They had come through. If there was one more danger he had one last trick left to help them. Yes; even with his death he could help them one more time, make it all right. What more could a man ask, he wondered, smiling, all calm strength to the bottom of his being, now, all one. . .

—And the sky fell in, the bottom of his being betrayed him with the memory that he would not remember. *What more could a man want?* He groaned, clenched his eyes.

. . . **I**N THE SPRING, it had begun. In the idle days after the planting was in. He and his eldest son, the young giant whose head he had once thrust into a bag, had made an exploration voyage.

A query had been in the back of his mind since Day One, the day the ship landed. In the last tumultuous minutes there had been a glimpse of another clearing, a white scar on the far south coast. A good site, perhaps, for a future settlement? And so he and Piet had taken the catamaran south to look.

They had found it. In use.

For a day and a night they had hidden, watching the appalling animals surge upon the devastated shore. And then they had cautiously threaded their way out through the fouled shoal waters toward the outer barrier reefs.

The shoals and keys extended far out of sight of land and a south wind blew forever here. They shipped the sail and paddled outward under a bare mast, blinded by warm flying scud, the roar of the world-ocean ever louder. A huge hollow whistling began, like a gale in a pipe organ. They rounded the last rocky key and saw through the spume the towers and chimneys of the outmost reef.

"My god, it's moving!"

One of the towers was not grey but crimson. It swayed, reared higher. Another loomed up beside

it, fell upon it. There was a visceral wail. Under the two struggling pillars mountains thrashed, dwarfing the giant combers breaking over them.

The catamaran retreated, tried another channel. And another, and another, until there was only moonlight.

"They're all up and down the whole damned reef."

"The bulls, perhaps . . . hauled up, waiting for the cows."

"They look more like enormous arthropods".

"Does it matter?" he had asked bitterly. What matters is that they're preparing to come ashore here too. To our clearing. They'll destroy it as they did the other. Get the sail up, Piet. There's enough light. We've got to warn them."

But there was not quite enough light. Piet had brought him home senseless and broken, lashed to half an outrigger.

When he awoke he demanded, "Have they started building the sea-wall yet?"

"The sea-wall?" Doctor Liu tossed a dressing into the wastecan. "Oh, you mean your sea monsters. It's early harvest time, you know."

"*Harvest?* Liu, hasn't Piet told you? Don't they realise? Get Gregor in here right now. And Hugh and Tomas. Piet too. Bring them, Liu."

It was some time after they came

that he began to realise he was a ghost. He'd started calmly, aware that they might think his judgement was warped by his condition.

"The area was totally devastated," he told them. "Approximately a kilometer square. There was a decapitated body, still living, near us. It was over three meters in diameter, at least twenty meters long. That was by no means the largest. They come ashore periodically it seems, to the same locations to lay eggs. That's what created our clearing, not a tornado."

"But why should they come here, Mysha?" Gregor protested. "After thirty years?"

"This is one of their nest sites. The time doesn't matter, they apparently have a long cycle. Terrestrial animals—turtles, eels, locustidae—have long cycles. These things are gathering out there all along the reef. One group came ashore in the south clearing; another will come here soon. We've got to build defenses."

"But maybe they've changed their habits. They may have been going to the south site every year for all we know."

"No. The newly smashed trees were at least two decades old. They're coming, I tell you. Here!" He heard his voice go up, saw their faces. "I tell you we dare not wait for the harvest, Gregor! If you had seen—*Tell them*, Piet! Tell them, tell them. . ."

When his head cleared again there was only Doctor Liu.

And shortly after that he discovered that he was a dead man indeed.

"It's in the lymph system, Mysha. I found it in the groin when I went in to ease the inguinal ligament." Liu sighed. "You'd have heard from it pretty soon."

"How long?"

"Back home we could—stretch it out a while. Largely unpleasantly. Here—" he glanced around the little surgery, dropped his hands.

"Outside limits. Tell me, Liu."

"Months. Maybe. I'm sorry, Mysha."

They had let him go out then. When he had found that they were still preoccupied with the harvest he was too weak to plead. Instead he asked them to bring him up here to the *noion's* grove, to silence.

"You ripen?" the *noion* had asked him.

He shrugged. "If that's what you call it."

The next day Piet had carried up his tapes and there had been the music and the poetry, and time passed . . . until the day when the stuff started to come ashore. Greasy, man-sized wads it was, something like ambergris, or vomit, or sloughed-off hide. Nothing they had ever seen before.

Upon that Piet had been able to persuade Gregor to send a scouting party to the outer reefs, and

then, having seen, they began calmly and gracefully to prepare the wall. Mysha found that his nagging did nothing to speed them and went back up to the grove.

A tape of poetry had been running when it happened. He had been half listening, half tracing with his eyes the roof-poles of the new shed housing the fibres and minerals the exploration team had brought in. A water-wheel was clacking in the near field. There came to him the memory of his arms lifting the capstones of the cistern arch and he frowned, recalling for the thousandth time that they were not quite trued. Next season he would—

Next season he would be dead, leaving all this to the young brown gods. He thought fondly of their occasional curious glances at the ship and then up, up at the sky. They would never know what he knew, but they thought as civilised men. That was what he had made. Not Ozymandias; father. His immortality. I die but do not die.

"You do not ripen?" came the *noion's* thought.

The recorder was muttering: "*Be in nothing so moderate as in love of man.*"

"You can't understand," he told the *noion*. "You build nothing, leave nothing. Nothing beyond yourself."

"—*This is the trap that catches noblest spirits, that caught they*



say, God when he walked on earth."

He slapped the thing off.

"How could you understand?" he demanded. "A spore, a god-knows-what without species or posterity. Man is a mammal, we build nests, we cherish our young."

An enormous panorama of nests came to him—nests made of spittle or silk or down pulled from the breast, nests excavated, dug into rock, woven in the air, in icebergs; eggs encysted in deserts, in the deep sea mud, carried in pouches of flesh, in mouths, on backs, eggs held for frozen weeks on webbed feet, thrust into victims' bodies, guarded on the wind-torn crags.

"Even those monsters who are coming here," he said, "It's for their eggs, their young, although they die doing it. Yes, I die. But my species lives!"

"Why do you cease?" the *noion* asked.

That was when the fear started. With his mouth he said angrily, "Because I can't help it. Can you?"

Silence.

His "Can you?" hung in the air, took on unintended meaning. . . Could it, this thing he called the *noion*, could it do . . . something?

An impalpable tension slighter than the pull of a star feathered his mind, the small cold seed of terror grew.

"Can you—" he started to say,

meaning can you cure me? Can you fix my body? But as he framed it he knew it wasn't relevant. The pull was elsewhere, in a direction he did not want to look. He crouched, horrified. The *noion* meant, it meant—

"You . . . to ripen?"

The tenderness opened in his mind, he felt a breach through which frightened tendrils of himself were leaking out, nakedly. He felt himself start to slip, to float into dark lightness, a vast non-space in which were—*voices?*—faint beyond galaxies, the ghosts of voices, untraceable filaments of drifting thoughts, a frail web-work of—something—in timelost immensities, in—life? Death's-life? Immaterial energies on the winds of non-being, pulling, subtly pulling him—

Terror.

He jerked himself into himself, broke, fought, gasped back to life on his hands and knees under the *noion's* bough. Light, air. He gulped it, clenching earth—and suddenly reached with his mind for the connection he had broken. It wasn't there.

"Dear mother of god, is that your immortality?"

The *noion* hung mute. He sensed that it was spent. It had somehow held open a dimension, to show him. . .

To invite him.

He understood then; his third,

his last wish could be . . . this.

He had lain unmoving while the sun ran down the sky, hearing no sounds of the life around him. . . . To go out, naked, alone. . . . To go out. Alone. . . . Those voices . . . had there been meaning, some inconceivable *meaning* in the ultimate void? . . . To go out, forever out, to meet . . . strangeness . . . to go *alone*, his essence, his true self free forever from the blood and the begetting and the care. . . .

It sang to him, a sweet cold song. Out—alone—free. . . . The other voice in the double heart of man. The deepest longing of that part of him that was most human. To be free of the tyranny of species. To be free of love. To live. . . .

He had groaned, feeling the sky close, feeling the live blood pumping through his animal heart. He was an animal, a human animal and his young were in danger. He could not do it.

Before the sun set he had sighed, and raised himself.

"No. Your way is not my way. I must stay here with my kind. We won't speak of it again. If you can help me one last time help me save my young."

**T**HAT HAD BEEN weeks ago, before the seawall had been raised. He sat looking at it now, trying to seal off the memory, the deep traitorous pull. The laser was installed,

he saw, and in the same moments heard footsteps coming up the path.

"Piet."

His tall son stood beside him, looking out to sea. He realised the whistling had grown louder. On the beach they were running now, shouting more urgently.

"Bethel says you're going to stay here."

"That's right. I want to try, oh, something . . . where will you be?"

"On the laser. Pavel and I drew lots. He got the raft with the repair crew."

"See that your mother and the girls get out, will you? All the way back to the big trees."

Piet nodded. "Melie and Sara are with the nursery team."

They stood silent, listening . . . *Louder now.*

"On my way," Piet said. "We're rigging an oil sprayer. We could get some carcasses burning beyond the wall."

He went, leaving a food parcel, and a flask. The afternoon was superbly beautiful, clear tourmaline sky melting to clear green opal sea. . . . Only, where sea met sky, was there a stir of clouds, a faint mirage of low hills which shimmered and dissolved and formed again?

The horizon itself was coming closer.

Mysha peered, hearing the whistling strengthen. Under it now and then came a dim groaning, as

though the reefs were in pain.

As he watched a file of women carrying babies and bundles came out of the colony below him and began to walk hurriedly down the path toward the jungle. The groaning came again. Two of the women broke into a trot.

On his left the shadows of the horizon thickened, heaved. A mountain was detaching itself through the misty air. It became identifiable as five dune-sized creatures wallowing toward the shoals. Men shouted.

The forerunners were well south of the colony, heading at the flax-oil field. As they came closer they showed as huge soft-looking lobsters with upright heads and thoraxes, their front legs dragging their distended bellies. Mysha knew them as the "cows." They crashed and floundered across the low reefs, groaning hollowly.

Behind them from the mists appeared their five "bulls," staggering with heads thrown back and their enormous tower-like organs erect. It was from them that the whistling came, loud now as a rocket vent. An oddly sad mechanical bedlam. . . As they mounted the reefs Mysha saw that the males' bodies were haggard, wasted in upon longitudinal rib-like flutes. All their substance and energy seemed concentrated in their great engorged heads, bulky as horses, and in the colossal members

wagging up from their front plates.

The cows' groaning became bellowing. They were in the last shallows now. Their mountainous abdomens heaved fully into view, sleek and streaming. Brilliant spectral colors flared and faded on their flanks. The males pitched in their wakes, closing on them fast.

Two males lurched together, clashing. Both stopped, wailed, flung their heads completely over onto their backs so that their crimson organs reared into the sky. But the threat-response could not last, so close to their goal. Their cows ploughed forward, the males' heads came up and they followed onto the land.

The lead cow was in the flax seedlings now, her belly gouging a canyon, her legs thrashing devastation. The two beyond her struck into jungle. Treetops flailed wildly, went down. The rending and crashing blended with the bellowing of the cows and the siren keening of the males. The last two cows were heading into the field. One struck the catamaran moorings a demolishing blow, ground on ashore.

The lead cow in the flaxfield slowed. Her abdomen showed gouges and wounds, ichor streaming down. Her mate reached her, grappled and mounted clumsily onto her foreparts in a parody of human embrace.

She began to turn ponderously in place, throwing up a ring-wall down which tumbled tree-stumps, rocks. The male's spermatogonium battered blindly, arching. His mate continued her gargantuan churning, deeper and deeper, carrying him with her. Her head was straining back, exposing gaping frontal plates. The organ of the mounted male caught, penetrated into her thorax.

What followed was not the convulsive orgasm of mammals but archaic, insectile rigidity. The cow's legs continued their piston-like churning, revolving the coupled monsters ever deeper into their crater, while the entire contents of the male's body appeared to drain into his mate. Presently he was only a deflated husk behind his gigantic head. Slowly they went round—and now Mysha saw that the male's forelegs were rasping, sawing at the cow's thorax.

In a few more revolutions he had severed it completely. Her head came loose and was held aloft, spasming. There was no laying of eggs. Instead, the male now pushed, wrenched, so that his own head and forelimbs tore free from the genital section of his body. With his female's head held high the bodiless head began lurching toward the sea, repeating in death the first act of his life. Behind him the decorticate body of the cow churned on, burying itself

deeper and deeper, a living incubator for the fertilised eggs within.

Mysha pulled his gaze with an effort from the two vast death's-heads reeling toward the sea in a trail of membranes and ichor. In the field two others were still coupled. Something had gone wrong with one. Her body had struck rock and canted, while her jerking legs toppled her onto the male and drummed on, grinding him under her.

Mysha shook his head, controlled his breathing. *The engines of delight* . . . He and Piet had seen this once before. He looked down at the colony, saw the watchers crowding the thatches, the water-tower, on the pilings. "Now you know," he muttered and weakly tried to shout until he heard Piet's roar, getting them moving. His pain was suddenly savage.

More horizon had thickened, was looming closer. It was deafening now, that ceaseless bone-deep whistle. The sun shone brilliantly on the ruined field where the three huge craters quaked. The walking heads had disappeared into the shoals, leaving only the diminishing drumming of the stranded pair.

A woman's voice pealed. Another line of burdened figures was hurrying from the colony on the jungle path. Mysha peered, fist pressed into his pain. Mar-

tine, Lila, Hallam, Chena—biologist, weaver, mineralogist, engineer. They looked like little brown monkeys. Naked primates fleeing with their young. That was how it would be, once the stored heritage was gone, the tools of culture ground to dust.

"If the wall goes you must help me," he told the *noion*. "You know how to make them turn."

The *noion's* silence became emptiness. He understood the communication. *This is the last, I can do no more.* It was very weak.

That was enough, that was all he asked. All. To save his own.

Dead ahead of them a new mountain was rising from the sea. The bellowing rose. Six ship-sized enormities, headed for the apex of the wall. Was this the test? They grew, loomed, floundering with surprising speed straight at the colony. Their males were following close, their organs higher than the water-tower.

Mysha held his breath, willing Piet to fire. The lead cow heaved, dwarfing the fragile wall. No beam came from Piet's laser. Mysha pounded helpless fists, not feeling his own pain. What was wrong with Piet?

Then at the last moment he saw he had misjudged the angle. The lead cow mounted the last reef and stuck, churning so that her followers ploughed on past. They struck the pilings a glancing blow

and turned along the reef line to the near fields. The stuck cow dragged free, swerved into their trail, and the males lurched after her.

Mysha breathed again. A new herd was coming ashore far to his right beyond the colony, their bellows almost inaudible below the rising bedlam from the field.

But these were only the fore-runners. Behind them the horizon boiled with monster shapes.

He groaned, studying the repair crews as they dragged timbers to broken pilings; even that passing blow had done damage.

The oncoming mountains grew, birthed new herds to right and left. Their uproar was passing the quality of sound, becoming an environment of total stress. Numbly Mysha watched a huge mass detach itself from the line and start straight toward the wall. Ten of them.

They were larger and the males behind them towered higher than any yet. The main herd-bulls were coming. The female in the lead crashed on, nearer and nearer. She was following the track of the first cow which had stuck upon the reef before the wall.

But this was a stupendous animal. The reef only slowed her, so that the next cow struck her, rebounded upon the cribs of the side wall and slewed off, spilling rocks. Then the first cow was free, making

straight for the apex of the walls. Her forebody reared. The head with its huge blind-looking eyes towered ten metres above the apex—a visitation from hell.

As it hung waiting for its limbs to churn it over a line of light sliced out from the tower. The beam struck her thorax. Mysha saw the plates smoke. A charred crack cut across the monstrous body—it was the abscission line where the male would saw. He understood then what Piet was trying. If the abscission layer broke the body might cease its forward motion, as they had in the fields.

The head wagged drunkenly, fell off backwards. The huge decorticated body heaved, boosting itself onto the crumbling piles of the apex. It was still coming—no, it was not! The leg-action changed, began to oar with the revolving motion. The tons of belly canted sidewise, skewering itself on the pilings, ripping open to release cascades of boulder-sized eggs. Around it churned, becoming one with the ruins of the apex wall.

The male who had been following was mounting on her now, posturing mindlessly on the heaving mass. Piet's laser bored out again and sliced. The male's head tipped backward, and as it did the female's legs caught on one side and tipped them both. One set of legs came free of the water, still jerking like machines. They were

thick as the pilings, a touch would break a man. But the monster-reinforced wall was still there.

Mysha had been so focused on the action at the apex that he had only vaguely seen the press of behemoths making shore along both bases of the wall. A chaos of craters was spreading far back in the fields as newcomers clambered bellowing over the encysted bodies of the earlier arrivals. Here and there among them the dying heads moved and capered toward the sea, only to be crushed beneath the incoming cows.

The wall was damaged in several places now. Mysha could see men slipping in the ichor jellied over the cribs. They hauled, splashed, mouths working soundlessly. The din around them all was so great that it felt like a wall of agonising silence. The pain in his groin fought with the pain in his ears; only his eyes lived.

For a long moment no animals came directly at the wall, and then a herd on the far side suddenly veered toward it. The lead cow hit the outer pilings mid-way and reared. As she did so Piet's weapon carved a line of fire into her thorax. But there was not enough time—another cow had reached the corpse-mound at the apex and was clambering up, crushing the dead cow's flailing limb's. Her mate was right beside her, Mysha saw the laser leave the first target

half out, strike at the pair mounting the corpse-pile.

Too late, too late—the incomers toppled forward, crashed into the bay behind the wall raising a thunderous wave. Rafts overturned, heads bobbed. The cow reared, bellowing, and smashed across the shoals to the fish-shed. There Piet's laser caught her thorax but she made one more lunge before her forward motion stopped and she began to churn. The fish-shed had vanished. Debris of coracles, nets, sails spewed out, disappeared, flying rocks struck the kilns. Piet was working on the male behind her now.

Suddenly a flame shot from the sea-wall where the partially disabled cow had burst the pilings. The oil-spray crew had ignited her. He watched the male behind her posture and wail and then sheer off.

Mysha panted, clutched against a tree, his eyes going back and forth around the holy wall. Bodies were impaled on it, merged with it in several places now. They were working out to the apex now to fire the corpses there. That must be Gregor's son with the oil. Three huge cows were just ahead of them, coming in. The boys clambered, straining with a drum. The cows came on. Then the boys leaped for the water and a rolling gout of flame blew out of the pile. Through the smoke Mysha saw the cows

lurch, slew sidewise to miss the wall.

He pulled himself upright to look around. The shoals directly ahead were momentarily clear. On either side of them was chaos and carnage as far as he could see. What had been their cropland was utterly unrecognisable, jumbled with the near jungle, heaving with nightmare shapes. Only the colony itself remained huddled behind its wall.

But the wall was still there, still holding! Defiance flamed from its oily pyres. Behind it their enclave, the heart of their life was intact, still safe. Except where the dying cow weltered among the out-buildings, nothing had been lost. All held safe! The fires—and Piet up there, his marksman of light—were they really holding them off, stemming the onslaught?

He started and saw that the horizon seemed thinner. Yes! It was breaking up, there were gaps. The shoals were still thick with wallowing bodies. No matter, the height of the attack was passing. Let the last ones come—they will be met with fire, be turned! *The wall will hold*, he thought, not feeling the water run from his eyes, the young gods have won through.

By nightfall it would be over. They would be safe.

Safe. They didn't need him.

In the numb heart of the unceasing din Mysha felt the faint stir in his mind, the silver hemorrhage

of hope. He was free! Free to let the *noion* take him forever to life among the stars . . . He shut the thought fiercely away.

Time later—

A crack louder than all the rest struck him, coming from below the grove. A skein of cloud flew by.

He gave a cry and hobbled forward to look.

From the wreckage of the roof two gigantic eyes glared up at him. Timbers fell. The thing was lying face up, it was the head of the male who had got ashore. Steam billowed out, a boy was lying on the ground. The head skewed into the open, pushed by scrabbling stumps of legs. Pavel and another boy ran into the steam. The steam lessened.

A man—it was Doctor Liu—ran up carrying a beaker. Pavel grabbed it, went after the colossal head which was grinding blind circles toward the generator house. Pavel danced aside from the legs, darted at the door-sized wound where the limb-stumps met. He flung the liquid, leaped back. There was a paroxysm that sprayed a brick-pile into the air. When the dust settled the head had stilled, its ganglia burned out.

But the broken roof had sheltered the main boiler that powered the generator.

The laser—the laser had only the batteries now.

Stunned, Mysha conjured frantic images of the auxiliary boiler that

they used to charge the batteries, calculated amperage drains. Too little, too slow. Too slow.

He turned slowly to search the sea. The horizon humped closer, only scattered herds now, breaking apart as he watched. Gaps on both sides of them.

But in the far shoals, straight ahead, a solid phalanx was coming. Mysha stared, shaking his head as agonies stabbed at him. The moving mountains rocked, heaved, their course relentless toward the wall. He studied the cribs, the smoking pyres. Pavel had boys tearing at the thatch. For torches, that would be. When the laser gave out they were done for.

They needed him.

Mysha groped back toward the tree from which the *noion* hung. As he neared it a wave of repulsion rose in him, an almost physical push to right or left so that he seemed to push against an invisible prow of glue. He knew what it was, though it was years since he had felt it—the *noion's* defense, the shield that had kept it safe even from the colony boys.

"No, no," he said thickly, opening his mind. "You must let me."

Mysha's eyes clenched with pain, the pain of dying hope. It had to die, that traitorous hope, he must stamp out every faint trace of it and tune his whole being to this task. He knew what moved the *noion*,



what made it act—his need. Only when he hungered totally, intolerably, could the *noion* fulfill him. He must want this and this only in every living cell of his soul and body, as he had before.

But how can I, Mysha thought despairingly, not hearing the clamour, not seeing the flames and the wreckage. A man can make his body walk into flames for his children's sake—a man can make himself turn away even from life everlasting to save his own. But the deed is not enough, here. I must want with my whole soul. Irony twisted his sobbing mouth. Too much—too much to ask of man, poor double-soul—that he desire his death with all his heart. To choose between his race and his life *and mean it?* If only the *noion* had never shown him—

"I can't," he whispered. "I can't." And was suddenly aware of love returning, rising in him from some deepest, most secret reservoir. The world came back around him—his beloved ones came back. And he began to feel he could. He could! Fierceness rose, bringing the blood-need. What would the stars be worth, if he must live forever knowing he had abandoned them? A new group of animals was heading for the wall.

"I will save you," he said thickly to the air. "The last wish is for you, Melie." And the need was there.

He turned back calmly to the tree

from which the *noion* hung, biting his mouth with pain. A wave of repulsion rose in him, an almost physical push to right or left away from the tree. He knew what this was—the *noion's* defense, the shield that had kept it safe even from the colony's boys.

"No, no," he told it, opening his mind. "You must let me."

The resistance around him shivered. He forced himself on, reached a hand painfully to the *noion's* bough.

"You must let me," he repeated, letting his need rise. This was not the place. The wall, he felt they must be on the wall, close.

The thick air thinned, went to nothing. He pulled awkwardly on the bough. It was long dead, but it would not give. Sick from the pain of pulling he fumbled awkwardly for his knife—and suddenly found himself involuntarily turning.

In silence the *noion* released its ancient hold, dropped against his chest.

He had touched it only once or twice before, carefully with a finger feeling its peculiar musty, lifeless warmth. Now with the whole creature in his arms his body resonated with its currents, its field. It was hard to keep his arms closed around it, he enclosed more than held it. Were brush discharges coming out of his hair and elbows? He could see nothing.

He began to hobble with what

speed he could down the rocky path to the base of the sea-wall below. The unceasing bellows battered at him, the pain of his body swamped his mind. He was in the smoke now, soot and flying spume rained on him.

When he could risk a glance from the rocks he saw that the oncoming army was much closer. Still headed straight in. He stumbled, forced his legs to run. Outside the wall two monsters were grinding by toward the field. The main group did not swerve after them. As he started to clamber out on the cribs he saw the defenders were bringing up more oil for the fire. Faces turned toward him. He could see mouths gape, but their voices were lost in that din.

The beslimed rocks were desperately slippery. He scrabbled, stumbled, not daring to free a hand from the core of silence in his arms. A patch of jelly sent him down on his ruined hip. He wrenched himself on sideways with knees and elbows, feeling a grating inside him, a skewering gush. One thigh was against the rocks now, his other foot kicking at the crib logs, somehow moving him on. *Like the beasts*, he thought, *I go on*.

A wave washed over him. When he could see again there was a vast flank reeling by him along the wall, shifting the crib he lay on. He was quite near the apex now. A boy seemed to be scrambling back toward him. Over the boy's head

nightmares were rising in the smoke.

He sagged, staring at monstrous masks, collecting himself. This was close enough, this would have to do. "*Noion, noion!*" he gasped. A cow reared up directly ahead of the flames, too closely flanked to be able to turn. "*Noion, help me.*"

At that moment Mysha felt a connection open in his mind, a tiny struggling like the shadow of a fish on a gossamer line. It was—yes, he was sure it was—contact with the dim life of the cow. The faint spark writhed, as if torn between its driving forward and recoiling from the fire.

This was what the *noion* could do, had done before to save itself!

As he hung with his outer eyes on the cow and at the same time . . . touching it, the pale streak of the laser came out overhead and scored her armour. She reared higher, her head slumped backward. The inner connection frayed out—and his eyes saw the cow's terrible bulk surge forward to smash down upon the flame in a blast of water and smoke. The pyre was extinguished.

Another cow was mounting the wall beside her. The laser cut, cut, swung to still another coming in. And now a monster of monsters heaved up upon the smoking carcass at the apex. The laser touched her. Its light paled, guttered and went out. The laser was done.

"*Noion, noion!*" the despair

screamed out of him, "Make her turn! Turn, turn, turn—"

And it was there, the line, the channel—and his need, his need drove out, met, *completed* itself in potency. *Turn!* His outer eyes saw only chaos, it was the eye of his mind that sensed when impulse leaped ganglion, when energy became assymetrical and the blind engines unbalanced the mighty belly—turning—veering it along the wall!

But as this web gave, he was aware of the others coming behind her; the dull energy-points of their beings blooming just ahead of his reaching mind. "Now, *noion!*" he prayed, trying to hurl himself, imploring, *Turn, turn, Oh noion help me—MAKE THEM TURN!*

Emptiness.

Vision came back to his eyes.

Beside him, beyond the wall, the behemoths were grinding ashore. They had turned. He had turned them!

Dazedly he saw others passing the far wall. The herd had split. As he watched, a last male tipped over the pilings, righted himself and lurched away after the cows.

And the shoals ahead were clear as far as he could see through the choking smoke.

He felt unbodied, weightless with exaltation and relief. Pain gouted and wrenched at him from below, but he was remote remote from the pounding, crashing, bellowing all

about. It came to him that he was quite probably dying. As he thought it he felt also a wave of weakness from the entity in his arms. This was killing them both.

*So be it.*

Another herd of horrors showed now through the smoke ahead. He reached for them from far, found the frail potency, fought, felt them shift, go slewwise. Wind blew the smoke flat. He realised he was seeing the true horizon, almost empty now. The main herd was past.

Ahead of him on the wall men wrestled torches toward the slippery crest. No one was near him. He found he was sobbing or screaming when he breathed, but he could not hear himself. A vague memory brushed him: a boy—had it been one of his sons?—had pawed at him, gone away.

He managed to twist agonisingly on his elbows so that he could look back at the colony. Yes, there was more damage. The hideous bulk of a cow reared among the dormitories, shedding timbers. But it was still safe. Still safe! His last gift had saved them, his dying had given life to all he held dear. Cocooned in deafness he let his gaze go out to the beloved scene. Still so beautiful, despite the smoke! Golden figures ran as if playing a game. His nest, his—

His life. Not the stars; this.

Why had the scene changed

subtly, as if transparency had congealed around it—turning it into something curious and tiny like a toy in plastic? His life work. The species lives, I die. The operative words, *I die*. Die, he thought, like a faithful ant whose nest lives on. Like those dying head-husks capering to the sea. Only that more may breed and die, to breed and die. The building, the breeding, the towers raised and fallen, without end. Disgust chilled him. For this I have forsaken—

*Be in nothing so moderate as in love of man.*

His traitor soul gasped, he fighting, fainting. Was it possible that a man could strive with his whole heart all his life for his kind, his young—and at the last turn away? It is my body's dying, only that, he told himself. In the end the brain goes.

He made himself turn back, peer.

They were coming. One more assault. The last, the last ones. It was so dark here. Or was the day ending? All over by nightfall.

Here they come. This one will kill us.

Good, he thought, good! Faithful ant. Forget the soul's weak protest. Those who come after can perhaps— No time. He groped inwardly, eyes closed, for the channel, the focus . . . and felt nothing.

*Noion!*

Faint in his mind: "You need . . . this?"

"Yes, yes!" he shouted into the roaring. Oh god, no time—the beasts were at the wall.

"Yes!" he screamed again, forcing himself to feel, to clench his need into the power, to touch, reach—ah! There! It came, it was there, the help, the opening—the *noion* was with him. He felt the beasts' lives now, touched. Turn, turn, turn! *Turn* with my last strength, with my death that I give freely! *TURN with my death that I did not need to die—*

The contact faded, was gone.

He opened his eyes.

A tower of armour was bulging through the murk above him, the rock he clung to tilted, slipped.

They had not turned.

They had breached the wall. An avalanche of piling was falling on his inshore side, the thunderous wake rocked his crib. And in the bay, on the beach, blotting out the colony from his horror-filled eyes—

"*Noion! Noion!*" He screamed, his death suspended over him, rushing in stasis—he knowing what had happened, what he had done. His need, his desire at the end had not held true—he had betrayed them back to the jungle, to the running and the dust. His human heart, his soul had betrayed them all—

"*Noion!*" his soul shouted. "Take me! Give me the other, give me back myself!"

But the life against his chest was  
(continued on page 118)

*Bill Johnstone's last story for us was "Breaking Point" (March, 1970), the first, he said, of a projected series. When we received a new story from him, after a wait of over two years, we expected the follow-up to "Breaking Point," but his covering letter explained it all: "Sorry to have made a break with 'Breaking Point,' but my life has been entirely too busy lately with scripts and rewrites and yet more rewrites (that's what Hollywood script-writing boils down to) for me to get back to the elaborate plot structure of that series. Herewith, a new story, new characters, new situation, and—just possibly—a new series. But don't hold your breath; it's more likely I'll get back to the old series again before I continue this one." Fortunately, series-story or not, "Mere Anarchy" carries its own resolution . . . and we'll try not to hold our breath for the next two years. . .*

## **MERE ANARCHY**

**WILLIAM C. JOHNSTONE**

**Illustrated by JOE STATON**

**I**T HAD BEEN so long since I'd seen another human that they took me by surprise. When things started hitting me from all directions I thought it must be a pack of wild dogs. But then steel bar—or something like it—came down on the nape of my neck, and through the flash of light I saw my spring-bow fall from my hands. Numbed and stumbling blindly, I felt my arms pulled behind me and several fists smashing into my face. I saw blood on their knuckles just before I passed out.

"APPARENTLY, his name is Will Arthur." Somewhere above the darkness a voice was talking. I didn't know how much time had passed or where I was now, but I tried hard to listen when I heard my name.

"What does it matter what his name is? He's a Bleecker," said another voice. I wanted to say, God damn you, it *matters* what my name is, but I kept quiet. I felt my cheek pressing against a rug, and my arms were bound tight behind me.

"What'll we do with him now that we've got him?"

"Why don't we just kill him?" said what seemed to be yet another voice, but I wasn't sure. They all sounded too much alike.

"No. He gets the usual treatment. Processing. Rehabilitation. He looks like a strong one, and if we're going to build a better world, we can use every man available to us."

"But a Bleecker . . ." said the first voice. "It's rare that we get one alive like this. Do you think he'll come around to our way of thinking?"

"*Everyone* comes around," snapped the other. "Everyone who is made to see the truth acquiesces in the end. No one can escape scientific truth. If he tries," the voice added, "of course he will be killed." I felt someone stuff my old army dog-tag back into my leather shirt.

By now I had the picture. I'd been captured by scouts from the Uptown Reconstruction. I'd never seen them in lower Manhattan below 14th Street before. But I'd been rummaging around in a cellar on 12th Street when they hit me. That meant they must be striking deeper into Bleecker territory now. Something was up. Did they know how few Bleekers were left? Were they trying to claim everything for themselves now?

Soon they went out and I heard the door slam. I listened hard but



could hear no clicking of a lock. I knew they had to be coming back soon, and I knew I didn't have much time. I opened my eyes slowly, saw that no one was in the room, then sat up. Sharp pains ran down my back and chest, and I could feel the stiffness of dried blood coating my upper lip and chin. Rough fellows.

The room was small. There were several chairs and something like a large drafting board with stacks of blueprints spread out on top of it. One small window let in the daylight, and, after climbing slowly to my feet, I managed to hobble over to it and peer out. No one was in sight—nothing but the usual ruins and rubble. Turning around again I made a momentary search and finally found something that might work—a water glass. I nudged it off the table onto the floor and crushed it with my boot. With the shards of broken glass to work with, I was able to cut the ropes from my wrists.

I worked my hands, restoring their circulation, and looked around the room again.

Now that I was free, I had the feeling that something vitally important might be contained in that stack of blueprints, and I wanted to do a last search through them. There was no time, though. Even as I started for them, the door opened. A man stared at me, bellowed, and charged. He was grey and middle-

aged, but he started my nose bleeding again with a sudden swing at my face. I kicked him hard in the groin, and while he was doubled over managed to put him out for awhile with a quick chop to the neck. It was the first time in a long while that I'd done something that felt as good as that, and I welcomed the old feeling of the blood-rush in my ears again. I was even tempted to wait for the others to come back, but that would be pressing my luck too far.

When I slipped out, I saw that I had been in some kind of mobile unit, right in the middle of a reconstruction site. All around me, tall girders rose up into the sky and rivers of bright sparks were cascading down from the unseen heights where the noise of machinery could be heard. The buildings were full of men, but no one was on the ground in the immediate area. I was wondering how I could make a quick escape without being spotted from above when I saw the opening of a mammoth excavation nearby. I recognized the ruins of one of the old New York subways below in the darkness and realized they must be ripping up the streets and remodelling the old lines. Whatever they were doing to the subways, though, they had provided me with a means of escape. I was sure I could remember their old routes again and make my way back

downtown to Bleeker territory.

In a couple of seconds I was across the dangerous open space and down into the darkness of the excavation. Hanging from one of the bared girders, I had no choice but to let go and drop—and hope the distance wouldn't be too great.

It almost was. For what seemed like ages I waited for the bottom. Then it hit me. I lay stunned on my back for a long time. When I found myself able to move, I could just barely make out where I was in the dim light still filtering down from above. I had landed on one of the old station platforms, covered now with dust and rubble. Probably the trash I had landed in had kept my ankles from breaking, for when I looked up I saw it must have been over a thirty-foot drop.

"42" could still be discerned on the signs which were riveted to the rusted girders of the station. From what I remembered of the subways from the old days I figured this must be one of the Times Square platforms. It was a couple of miles from here back to Bleeker territory, but if I could just get my bearings I'd be able to make it back through the tunnels. I dug into my jacket for my flashlight. Fortunately it was still there. I felt naked enough without my spring-bow, but no light now would be disastrous.

After a few moments' deliberation, combined mainly with sheer guesswork, I decided that the

platform I was standing on must be the downtown platform I was looking for. Letting myself slowly down into the trough which still contained the old, unused local track, I wound the mainspring and turned on my flashlight and took a look around. The light whirled as its beam swept the tracks. The trough was filled with layers of silt and dried garbage, and the rails, where they could be seen, were wholly rusted. They were still intact, though, and as long as I followed them, they would lead me somewhere—hopefully, downtown. In any case, I could know by the next station whether I was going in the right direction or not.

Not long after I had entered the darkness of the tunnel I was surprised by some scurrying sounds off in the darkness. Shining my flashlight ahead of me, I was confronted with the glowing eyes of several surprised cats. Cats had infested the subway system even in the old days, but these looked far more predatory than any I had ever seen. I was wondering whether it would be safe to try to inch past them, when a large rat slunk out from the garbage right in front of me and then darted down the tunnel. In a split-second the cats were after him. Later their shrieks somewhere off in the darkness told me they must be fighting among themselves over the prey. The tunnels all over the city were probably filled with



vermin and constant slaughter. The Reconstructionists would have quite a time ever clearing them out. I only hoped that the cats and whatever else might lead its life down here in the darkness were provided with enough food to be uninterested in me.

As I made my way down the tunnel, keeping close to the rusty rails at my feet, I began to think about the Reconstructionists, and what they must be trying to do now. It had been over twenty years since they had deserted New York completely and moved out to the distant suburbs and exurbs, leaving the city to those who would have it. Most of those who had stayed had been like myself—people who prided themselves on their independence and individual tastes. Because Bleecker Street had been the main street in the area where a lot of us originally lived, we had come to be called Bleeckers by the others, though we had never banded together into any one cohesive group. Each of us was too proud of his independence for that. But the city had fallen apart, and finally had been razed by fire and invaded by packs of wild animals, since there was no group or organization of any kind to hold it together. Now, for some reason, all those others, the people who had migrated like sheep away from the big cities and whom we had been more than glad to get rid of—now those others had

returned and had begun to reclaim and reconstruct. As long as they had stayed well above 14th Street, in the upper regions of the island, no one had paid much attention. But now this. Invasions into Bleecker territory. Even an attempted capture. There were so few Bleeckers left now—I hadn't seen the signs of anyone in over a week and had spoken to no one in at least a year—that it would be easy for such a take-over to come about. Things looked awfully bad, and I began to fear that I would at long last find myself having to move away from the city for good. From what I had heard back in the trailer about "processing" and "rehabilitation" the suspicion began to grow in me that there might be nowhere at all to escape. It sounded now like anyone who refused to conform to the pattern wasn't even going to be tolerated. Things looked bad all right.

UP AHEAD, a rectangle of dim light showed another excavated station. I hurried on as fast as I could, anxious to know for sure what direction I was going in.

It was the wrong one. I was in the 50th Street station, heading up-town. Just as I was turning around to retrace my steps, a woman's voice said, "Stop right there. A pistol's pointed at you."

I couldn't see anyone, nor could I see the pistol. But I stopped. It just

wasn't my day.

"Turn around now," she said, and I turned around, expecting the worst, but was merely blinded momentarily by the glare of a strong flashlight.

"You're . . . you're a Bleecker, aren't you?"

I strained my eyes and made out a slim, girlish form behind the flashlight. From what I could tell she was very young, very pretty. And dressed in black, like all the others.

"Yes, I suppose I am," I said.

"I've never seen one before now," she said, sounding slightly awestruck. It made me feel uncomfortable to be stared at as if I were some kind of exotic animal.

"Look," I said, "why don't you just let me turn around here and go back where I came from. Neither of us wants any trouble."

"Oh no . . . not that. You're mine now. Just stay where you are." She tried to assert her stern tone of voice again, but it was too late. She had already revealed her real feelings. She was just a young girl, filled more with fascination than with determination to turn me over to the others. She probably wouldn't even shoot if I turned around and walked away, but I didn't feel like pushing my luck.

"What's your name?" she asked.

"Will. And what's yours?"

"Norma. Norma Horner. Does that mean anything to you?"

"No."

"I'm the daughter of Chief Planner John Horner. I could turn you over to him if I wanted to. You know what he'd do to you?"

"I have a pretty good idea."

"So you'd better do as I say . . . Will. If you know what's good for you."

The kid was shaking. My eyes were used to the dim light by now and I could see the gun trembling in her hand. I could see, too, her large dark eyes and the long black hair that hung down over her shoulders. It had been a long time since I'd even seen a female and this one looked pretty good to me. I was in no hurry to leave.

"What do you want me to do?" I asked, holding my hands out and trying to be congenial. "I've got no place in particular to go at the moment."

"Do you live some place?" she asked. "I mean, do you have a place of your own down there? Down there in . . . Bleecker territory?"

"Sure," I said. "It isn't luxurious but it's homey."

"Maybe . . . Well, don't get the wrong idea now. I've still got this gun. But . . . well, maybe you could take me there, that is, show me how to get around there. Sort of." She brought the gun up level with my chest again. "That is, if you don't play any tricks on me. I hear Bleeckers are awfully sneaky."

Lord, what a sweet, innocent girl. She was a walking victim—waiting for disaster to strike. And the daughter of the Chief Planner, no less! Glimmerings of an idea began to percolate in my mind . . .

"I'll be glad to show you around," I said. "Is that, uh . . . is that what you were doing down here? If you don't mind my asking." I made my voice hesitant.

"Oh," she said, the gun lowering again. "You're wondering what I was doing here. I've been coming to work with my father lately. It's so terribly, terribly dull anywhere else, you know. But even here I've been doing a little exploring to relieve the boredom. I used some of my father's old subway maps to get around with. They've reconstructed the subway down to 59th Street now, you know."

No, I didn't know. That was only one more stop away. I thought with relief that Norma had probably saved my life by keeping me from going any further. She didn't ask what I was doing down here, myself, so I decided that she must think Bleeckers made subways their natural habitat. For the time being, I saw no reason to contradict her.

"How do we get down past 14th Street, though?" I asked, this being a particularly sore point with me at that moment. "Are you willing to go through these tunnels?"

"Oh no. That won't be necessary. I've got my own copter up above."

"Well, that's great," I said. "Shall we go now?"

She looked suspicious again. "As long as you don't try anything . . ."

"I'm completely at your service," I said, putting my flashlight back in my jacket. "Just show me the way to your copter."

When we climbed over rubble to the street entrance—a gutted kiosk—I hesitated a moment. "Are you sure there's no one around?"

"Oh, no," she said, "they're busy down in the Times Square area right now. It's deserted around here."

We emerged in the scorched rubble that littered what had once been Broadway. The copter was nearby and we climbed in. I had never even been in a copter or plane before and I wasn't quite sure what to do. My very real naiveté about the whole matter seemed to win Norma over completely, for she put up her gun to show me how to strap myself in. I was careful to see that she had no reason to fear me now. I did nothing but breathe in the fragrance of her long black hair as it brushed over my face.

"Isn't this fun?" she said as she turned on the ignition and the rotating blades began to blow up great clouds of dust. I almost laughed at her wide-eyed girlish glee, but then the earth dropped away beneath us and all I could do was hope she damn well knew what she was doing.

The higher we rose, the clearer my situation became. I saw that, spread out all around Manhattan, on the distant sides of both rivers, were the tall, grey, block buildings of the Reconstructionists, varying only slightly in size but never in shape. All of them were crammed close together, yet they ran off in seemingly endless rows towards all points of the horizon. It was a depressing sight to me, for it was apparent that Manhattan was the last surviving stronghold of the values by which I lived, and it was crumbling before the onslaught of bulldozers and acetylene torches even as I watched. From its northernmost tip to approximately the middle of the island, more of the same grey buildings had only recently been reconstructed, and they gleamed now with their steely reflections. Beneath us, from where we had just come, reconstruction was being actively carried out. Ruins were being leveled and new buildings were in the midst of being built, the light still shining in gridwork patterns through their bare girders. But below 14th Street, the area toward which we were now heading, the ruins of an older era still stood, patched and bound with vines and wild growth that had sprung up and claimed the whole areas of brick and cement over the years. All was in a state of luxuriant decay, somehow like the Mayan ruins I'd seen pictures of as a boy—

both highly civilized, yet in their ruinous state, at one with the wild, primitive nature which had infiltrated them throughout.

"I've never been here before," shouted Norma over the roar of the copter blades. She was probably trying to tell me she was scared. I said nothing.

After some tricky maneuvering, we landed at the point I indicated near the place where I lived. No dust blew up at our descent, but great patches of ragged foliage clinging to the ruins of collapsed buildings shook violently in the draft.

The blades slowed to a gradual stop and we got out. My place was in the cellar of a building which was hidden in one of the small side streets that abounded in this area. Norma still had her gun out and walked a safe distance behind me, but I knew it wouldn't take long for her to forget these precautions. She was already too fascinated with everything around her, which was, she said, more decrepit and yet at the same time more beautiful than anything she had ever seen before.

"Never been in a place like this before either?" I asked as I lit the two lamps which hung from the ceiling of my front room.

"No . . . never," she said, sounding aghast as she looked around her at the shelves of books that lined all four walls. "I've never seen so many books all together

like this in my whole life."

"Read much?"

"No. The books they give me to read are so dull."

"Oh."

I sat down in one of the tattered but still overstuffed easy chairs. It had been a long and bruising day and I was exhausted. She couldn't sit, but ran from one thing to another, seeming to marvel at every thing her large dark eyes set upon—the wood stove at the far end of the room, the heavy carpets spread out at random on the floor, the warm, dishevelled atmosphere of the whole place which must have seemed to her to reflect the same kind of pleasant chaos that the whole of the Bleecker territory consisted of.

"I think I could live in a place like this forever," she said, after surveying the room with bright eyes.

"You're not happy where you live now, are you?"

"Miserable! Oh, just miserable!" she said, her eyes childishly wide with expression of her misery. "Everybody tells you what to do—'Do this! Do that!'—from the time you're born till the time you die, and you finally don't even believe in your own capability to think straight. You'd never believe, leading the kind of life you do, Will, what a person has to go through everywhere else. They tell you what to read, what to eat, what to do,

and when it all should be done and when it shouldn't. They tell you when to get up and when to go to bed, when to go to school and when to stop. They even tell you who to love. Would you believe it?"

"I believe anything these days."

"Well, that's my problem now, anyway. Who to love, that is. I'm eighteen now and it's no more school for me. That means no more reading either, you know. I'm through with studying—I'm of marriagable age, now. So they'll find someone for me to marry and they'll say 'Go! Be happy!'" She raised her finger and pointed imperiously, her eyes open wide again.

"You really don't want to go back, do you?"

"I have to, eventually."

"Why?"

"Remember, I'm the daughter of the Chief Planner. That's the only thing which makes my life tolerable. It gives me more freedom than most girls my age, with the copter and all. But if I disappeared for any great length of time, they'd all be after me, searching everywhere."

"Must be terrible to feel pinned down like that," I said.

"I've often wanted to run away," she said after a moment. "I could, too—it would be easy with my copter. Just fly off toward the mountains or somewhere where there still aren't so many people. But not alone. I get too scared when

I'm alone to do something like that. And I don't think there's a time in my life when I haven't felt alone."

I felt a sudden burst of exhilaration which I suppressed. She was lonely—it was the weapon I needed. "I've . . . I've lived alone for a long time myself," I said. "I've know loneliness."

THERE WASN'T MUCH FOOD—I'd been out hunting when I was captured—but I managed to cook a fairly decent meal for the both of us. The food, as I expected, made just as good an impression on her as everything else. People who have lived their lives on food from refrigerated tinfoil always react the same way to meat just recently killed and drained of its blood, or vegetables just unearthed from the garden. At first they're offended. Then they wonder what they've been missing.

"I suppose I'd have to go to work and do something like this all the time where you come from, wouldn't I?" I said as I was washing the dishes.

"Of course," she said.

"Somehow it doesn't appeal to me unless they're my own dishes I'm washing. It's not work then. There's a big difference between work—that kind of work, anyway—and laboring for yourself. I never mind laboring for myself . . . or for someone close to me." The words sounded strange coming

from my mouth. The last woman I had known was killed by a pack of wild dogs three years earlier. We'd done the mating thing a few times—she'd wanted some kids—but if anything had ever come of it, she'd never let on. We never lived together, and I found out about her death by accident—arriving on the scene too late to help.

"Have you ever loved, Will?" the girl asked. I breathed an inward sigh of relief. We were thinking the same thing.

"Yes. Years ago," I said, and told her briefly as I sat down beside her of how I had once loved but given up the idea of ever loving again . . . until now.

"I've never loved before," she said, "so I don't guess I know what it even is. But I think maybe what I feel now is something like it."

I put my arm around her and kissed her on the forehead between her unearthly brown eyes. "It's an end to loneliness," I said.

She spent the night with me. Next morning, while we were still in bed, I thought I heard voices outside in the street. I knew I should have gotten up right then—and I would have in ordinary circumstances—but I let myself drift off again. The next thing I knew, I was alone in bed and Norma, fully dressed, was opening the front door.

"Wait? What is it . . . ?" I said groggily.

"They're already after me," she

said. "I can hear them." Then she ran outside, leaving me no chance to say another word.

I leaped out of bed and ran to the front steps to see where she was going. But I only caught a glimpse of her struggling with two men in black suits, while another, the one with grey hair whom I'd tangled with the day before, stood to one side.

"Go back, Will! Go back! They'll kill you!" she screamed.

Then a line of deafening explosions cut across the wall just above my head, raining shards of brick and mortar down on me. I leaped back inside and slammed the door shut again just as another series of high-explosive bullets raked across it. They'd spotted the copter from above while searching for Norma, I realized. I'd meant to throw something over it—but the events of the past night had left me no opportunity. I'd been stupid—damned stupid. And now they had me again. I could see they had given up on the rehabilitation idea.

Dressing as fast as I could and grabbing my only other spring-bow from the shelf, I made for the rear exit which led up inside the building. The shooting had stopped, but I could hear a hoarse, funneled roar in the street. Flame-throwers. They were putting their clean-up equipment to work for them. I looked back and saw the front door turn instantly to flames just as I

started up the metal stairs. By the time I reached the next floor, my whole room was filled with jellied flame and clouds of thick black smoke boiled up the stairwell behind me. The whole building would burn down.

All my books, I thought, as I climbed out a window and jumped to an alley below. All my books, hoarded for a lifetime through years of censorship drives and book-burnings. Probably some of them were the last surviving copies. What knowledge from them that could still be salvaged was contained in me now. But I was in no mood for self-preservation. The rest of the Bleecker territory was doomed, anyway, unless someone did something. It was time to fight back.

I carefully made my way through several blocks of ruins and disappeared down one of the subway entrances. Even if Norma told them that this was where I'd go, they would have a hell of a time finding me.

I spent the rest of that day lying low. I found an abandoned car on the old 14th Street line and decided to make that my center of operations for the time being. That night I emerged again and made my way uptown until I found one of the active Reconstruction sites around 34th Street. They were erecting a whole complex of buildings around the area where the Empire State

Building had once stood. No one was working at night, but several guards were stationed around the area, since it was close enough to unclaimed territory to be threatened by sabotage.

Well, it *was* threatened. But as far as I was concerned it wasn't guarded. The spring-bow did its silent work well. Hiding in the shadows here and there, and taking my time to aim carefully, I watched four guards drop, one after the other, their rifles clattering to the street as they clutched at the thin bolts in their throats. I didn't bother to pick up a rifle; it would have been too heavy. Besides, the bow was far more effective.

As soon as I'd done away with the guards in the area, I moved in on the power center itself. It was made up of several portable units, each as big as the work office to which I'd been taken when I'd been captured. Each unit contained great generators and the engines which drove them. I prowled them, looking for something I could use, some way in which I could effectively sabotage them. I found what I wanted in the most central unit, a module which housed the switching station. The generators fed into this, and, shunted by load-estimations from a central computer, lines spread out to the nearby construction sites. At this hour the generators still roared their song of power; apparently they couldn't be shut

down and started up again each working day. I studied the control board in the switching station and then threw a series of switches.

The smell of ozone was already thick in the air as I ran out through the alleyways of the power center, and almost immediately a siren added its wail to the rising din. I loped across the open spaces beyond the clustered units and then paused in the shadow of a footing for a building site, stumps of girders rising from it like fresh seedlings in a giant's garden. I stopped and looked back, waiting—wondering.

The noise seemed to be dying—the subsonic throb of the generators' massed song was gone. Only the siren kept up its banshee scream. Then it too fell and was silent. Was that it? Would things just—stop?

A light seemed to be growing from somewhere beyond the nearest generator stations, a pale glow that cast no shadows. It brightened, then died. The night was still.

IT WAS WAR that I had in mind—total war. One man against a whole society. I burned with the fever of one whose life was threatened with extinction—and one whose lifestyle was already destroyed. And they—what did they know, these Reconstructionists? To them I had been only another wild animal, to be rounded up and reconstructed—



or to be slaughtered when I touched briefly upon the life of a boss man's daughter. In the end, I knew, they would get me. I hadn't been clever enough—or I'd been too clever for my own good. I'd thought to use that silly girl as a weapon. Vague, unshaped thoughts of holding her to force her father to abandon the reconstruction had blinded me to my own betrayal of myself. Who, after all, had brought her to my hidden nest, my snug hideaway? Who had stepped into the very trap he'd been weaving—caught up by the very loneliness he'd intended to exploit?

She'd been so *young*! When had I last seen a girl as young and unspoiled by life as she? Fifteen years ago? Twenty? Too long. As her barriers had crumbled, so had mine. In the end, cuddled there in the darkness of my bed, the lamps extinguished and the air scented with our sudden sweat and musk, it had been I who had trembled at her touch—even as she trembled at mine. Who could have imagined two greater fools?

To fall asleep with one so young, so soft and innocent of my craft and Bleecker ways—I'd lost myself and all my cunning. And wakened to pay the awful price: the loss of all I held most dear. Did that list of prizes include her too? Norma of the dark, dark eyes? I didn't know. I only raged to destroy.

For several nights running I hit scattered construction sites, im-

provising my means for sabotage on each occasion. I spent my days hiding in the subway tunnels, my only food the meat of those vermin I killed there. I used the tunnels to reach each new area I struck, and kept moving constantly. I knew I was neither eating nor sleeping enough, but the fires of hatred fueled me and drove me on.

I couldn't go on like this much longer. Already they were beefing up their guard forces, and the fifth night they almost caught me by surprise when I climbed out of an emergency exit from the Second Avenue subway, up near the 59th Street Bridge. I got away, but without accomplishing what I'd come for.

It was time to rethink my strategy—or what passed for it. It was time to start thinking sensibly about what lay ahead.

The alternatives seemed few and grim. Return to my life as a Bleecker was out. I'd built it up out of years of scavaging, roaming abandoned buildings, forcing locks long forgotten by those who'd set them, seeking out those articles and utensils I most valued. Records—and the clockwork mechanism for my tinny-sounding player; I'd used a whole year just to invent a working record player so that I might once again enjoy the sounds of music. And books—my lifelong companions, consoling to me on any occasion, old friends and much

thumbed. Furniture too, when I needed it, although most of the bulky stuff I'd brought down from the upper floors of my old building, fearful of my chances lugging anything so cumbersome through the streets. I'd built myself a cave—and satisfied my primordial longings. Now it was gone—all of it. I had no heart to try again, and I knew I would have no opportunity. I might well be the last living Bleecker. Soon the entire island would again be filled with people, guided and purposeful, and all that I'd cherished would be gone.

What else then? A short, sweet life as a avenging saboteur? I might measure the days left to me on the fingers of one hand. There were too many of them, and they were alerted now, their construction sites brightly lit with great lights, bright as day.

Escape—to somewhere else?

*Where?*

Norma had spoken of running away . . . late that night, when we were spent and nearly asleep, she'd murmured a wild, incredible plan for us—we'd escape, she said, into the Rocky Mountains, where there was a Free State and people would let us live our own lives together. It had sounded foolish even then, but I'd voiced no objection; the moment had been too fine to spoil.

What if I *could*—?

What about Norma?

For the first time I considered the

idea of finding her again.

I HAD ONLY one place to look—and that was a long shot. I had no idea where she lived, or whether her father had sent her somewhere else. But if she still had some degree of freedom, would she be looking for me? My chance lay on that thin supposition—that she might indeed try to find me. Because there was only one place where we might both go—if we were seeking to meet again. It was worth trying. I made my way across town through the tunnels to the 50th Street subway station where we'd first met.

I went the last short way without light, afraid I might betray myself if others were in the tunnels—the reconstruction was very close, here. I climbed up onto the narrow catwalk that hugged the tunnel wall and groped my way along it toward the dim gray light of the roofless station.

I edged out onto the station platform and the place was as cold and empty as a crypt. I stood, back against a crumbling tile wall, and listened to my own heartbeat and the echoes of water dripping somewhere, a long way off.

Then, startling in its closeness, something fell—a shard of tile perhaps, or a piece of concrete—and I heard a shuddering gasp, an in-drawn breath. Someone else was here—and near by.

I remained silent, unmoving, my

own breath silent, caught within my chest—waiting.

Again a sound: a ragged exhalation. My ears caught its direction and I turned my head. There, in the corner, only yards away—something darker, crouched down low in the shadows.

“Norma,” I whispered.

“W-Will?” A tiny voice, choked with fear.

“Yes—it’s me.”

Suddenly she unfolded herself out of the corner, rising from her huddled crouch and threw herself into my arms, muffling her sobs against my chest. “Oh God, Will, I’ve waited so long for you—!”

I petted her clumsily, unwilling to let go of my spring-bow. She raised her face, a blur of white in the thick grey light, tears and dust smudging her cheeks. I bent my head and kissed her and then she fell to sobbing again, clutching me tight against her.

“Every day,” she sobbed, “every day I’ve come here, hoping—praying! Every day it’s been harder to slip away, and I—I couldn’t help fearing that you—”

“That I’d never come? But I have, so you must dry your tears, little one.” I pulled free of her and looked down at her. I put my free hand against the side of her face, tilted her head up to look at me, and let my fingers trail through her thick loose hair. “We have things to talk about,” I said.

“You must stop,” she said. “They’ll catch you—I know they will. They’ve put a bounty on you, Will.”

I laughed, forcing it out. “A bounty? The price of fame?”

“Don’t laugh, Will—Please don’t laugh at me.”

I shook my head. “I wasn’t laughing at you. But you’re right—they *will* catch me . . . unless I can escape someplace.”

She clutched at my free hand. “You can, though! You *can* escape! I can help you.”

Subconsciously I was aware that something had changed. Something had happened somewhere close by; I’d heard something, or smelled it. I didn’t know what it was but suddenly I was alert—and suspicious. I pulled my hand free of hers with a jerk and she cried out. Then, without further warning, a bright light caught us both, dazzling my eyes before I squeezed them tight shut and ducked my head.

“Don’t move—either of you! From where I stand I can wash you both with flames in an instant!”

I knew his voice. I risked cracking my eyes open, looking away from the light, then glancing up at Norma. She was frozen, her eyes wide and staring, blinded by the light and making no effort to look away from it. “Father—?” she asked.

Something brutal clamped my gut and I felt my bile rise in a mo-

ment of galling suspicion. But the moment passed as he spoke again:

"You're no daughter of mine," he spat. "You're no more than an animal—lie with animals, *be* an animal!"

"You don't—" she started.

"*Quiet!* A touch of my finger—just a single touch, and this disease which you've become will be cleansed and purified in fire."

"Your own daughter—?" I choked out.

"Silence, animal! I have no daughter. She who was once my daughter has been corrupted and defiled. Don't think I didn't know about her! The little whorefilth! Why do you think I allowed her the freedom to come here each day, seeking her tryst with you? Bait, animal—just bait with which to trap you."

"I must mean a lot to you, then."

"You?" He snorted with derision. "In just a few days you've set back the Master Plan for Section 34H a full *two weeks!* Do you think we will tolerate it? Did you think we would let you go on with your murderous rampages against society?"

"Against society?" I repeated. "You're the vermin—you're the filth! Book burners, aren't you? You can't tolerate anyone who doesn't fit your narrow mold, can you? What was I to you when your men first jumped me? What call had you to destroy my home, burn out my books? Who are you to im-

pose your regimented ways upon me, anyway? Well—go ahead, burn us both. Destroy us—that's all you're good for, your kind. Destroyers—!"

From somewhere beyond the bright burning circle of light I heard a choking noise. "*Destroyers?*" He was screaming now. "We're the *builders*. We Reconstruct! We—"

I grabbed Norma and pulled her with me as I jumped off the platform, down onto the tracks. Still blinded, she fell against me, knocking me from my feet and pinning me against a rust-crusted rail.

I could see quite well down here—the light spilled over and suddenly I saw our salvation. "Roll," I whispered to her, and pushed her in the direction of the platform edge.

From overhead came curses and imprecations and then the heavy *woosh* of the flamethrower, licking out over the platform.

"Quick!" I pushed at her, and she rolled and I rolled after her, under cover, under the platform.

I'd never noticed it before, but the platform was hollowed out underneath, for a depth of several feet, in regular arched concavities. Perhaps they'd been placed there for the safety of anyone who fell to the tracks before an oncoming train; maybe they were there for totally different reasons. I wasn't in a position to debate the point. I was

just grateful for the momentary safety they offered.

Something singed my leg and then I was huddled under the platform, Norma somehow crouched almost directly under my body. It was a filthy, dust-laden place to hide, and hardly big enough for both of us, but it saved us.

We waited, breathlessly, until the roaring of the flamethrower stopped. For several moments nothing happened and there was no sound. Then the light grew first more faint, then stronger again. He was moving around up there, shifting the light about. We could only wait.

The light suddenly fell directly on the tracks, and I saw my springbow, fashioned from a leaf spring from an abandoned automobile many long years ago, lying there—centered in the bright beam. It lay only a few short feet beyond my reach, but I dared not make a grab for it.

A thin snickering sound was followed immediately by the renewed blast of jellied flame and napalm curled its fingers over the bow. For an instant the bowstring—a fine wire—glowed brightly incandescent in the flames. Furnace heat blasted against us, and I saw Norma's lips pull back in an attempt to scream. I clamped my hand over her mouth and in that same moment the flames winked out.

The light, still directed at my bow, seemed wan and pale and the

remaining piece of steel glowed with a ruddy light of its own. I removed my hand from her mouth and, my lips against her ear, I breathed to her, "Don't move—keep quiet." Then I moved free of her, and scuttled, crabwise, into the next hollow back along the tracks toward the downtown tunnel.

I foresaw only two possible actions on the part of the man who was her father. Either he would leap down onto the tracks, or he would go down to the end of the platform where a short ladder descended from the catwalk to the track level. He had to come down to see what had become of us. He had to be sure we were finished. He had come this far—he would see it to the end.

He came down the ladder, as I rather thought he would.

I waited until his feet were on the last rung and then I grabbed one leg and yanked it toward me, under the platform.

He yelled and twisted himself as he fell, landing on his hands.

The electric torch he'd held fell and rolled between the tracks. The flame-thrower fell from his other hand, and flopped loosely against the trackbed. A hose ran back to the tank strapped to his back, and this I knew was the danger—that before I could stop him he might regain control of the device.

I gave him no time but jumped onto his back, crushing him down against the rails. He rolled under

me, his hands groping for the business end of the flamethrower.

That was his undoing. When a man relies too much upon a weapon, he will seek to use it even when it is a distraction to his defense. He rolled onto his back, pawing frantically for the flamethrower, and the tank caught somehow against the rail under him, checking him abruptly. I fell on him, pinning his arms, my knee driving into his gut.

I heard Norma scrambling toward us and then her voice, thin and tight: "Don't kill him, Will—please don't kill him!"

I didn't have a choice. At that moment her father heaved himself up against me, simultaneously dislodging me and freeing himself from the rail against which the tank had been jammed. I blundered back into Norma and fell, knocking her down again. Her father came to his feet, suddenly in the light at his feet looking like an avenging demon. He was panting and gasping, his arms moving jerkily for the flamethrower, dangling from the tank on his back and eluding him for that moment.

I lunged at him again, and he stepped backward, his foot twisting on a rail. He went backward sprawling, and I had a glimpse of my still-glowing spring-steel bow before he fell against it.

A warning clicked into my mind and I pulled Norma back, down the

track toward the tunnel just as the flames exploded around him, enveloping him in his own funeral pyre.

IT WAS AN ANTI-CLIMAX when I cautiously escorted Norma to her copter. The day was nearly done; the sun lay low against the Jersey Pallisades, birds sang evening songs, and no one else was anywhere in sight.

"This thing will never carry us two thousand miles," I said as I followed her up into the tiny open cockpit.

"No, but we'll find our way, once we're beyond the Eastern Reconstruction Zone," she said. She looked up at me, her big eyes still moist with tears. "We'll get there," she said. "I know we will. People will help us."

"You're still too damned trusting," I told her, but she didn't hear me over the noise of the copter. I decided that was just as well. She'd probably always trust too easily, but maybe that was what drew me to her. I knew I could never betray her trust; her vulnerability was her best defense.

The tiny machine lifted us into the air and we hovered for a moment like a dust mote caught in the rays of the setting sun. Then the nose dipped, and we were skimming across the purpling sky. I took one long look at the dwindling island

(continued on page 129)

*When we introduced Gerry Conway to the sf field in our November, 1970, issue we said "You'll be seeing more of him, here and soon." Gerry was then a young, teen-aged comic-book writer working on his first novel, and soon after his first story ("Through the Dark Glass") saw print we bought his "Star Walk." In the ensuing months he sold his novel, The Midnight Dancer to the Ace Specials line, accelerated his comic scripting, and asked us to hold his story until he could do some revisions on it. Time passed, and Gerry assumed the chore of writing four comic-books a month for Marvel, graduating highschool a successful full-time professional writer. Somewhere along the line, the revisions on his story got lost in the shuffle. Now, after emerging for a gulp of air from the frenetic world of monthly deadlines, Gerry has sent us "what amounts to a new story" and tells us that he's eager to do more—one of which will be an upcoming cover story, written around A Mike Hinge painting. In the meantime, here at last is the new, revised—*

## **STAR WALK**

**GERARD F. CONWAY**

**Illustrated by BILLY GRAHAM**

**I** WALK THE STAR PATH; here it is all darkness, and the pale light casts no shadow. Here it is cool, in this place between the lives, in this emptiness.

I walk alone. Such is the way; it is, it will be.

I walk for a time, and in time, I come to the world of Three Suns.

There, for a moment, the walk ends.

THERE IS a taste of sunlight warmth in the air, tingling like a memory of flowers on my tongue. I step

down into being, holding the instant in my senses, savoring it, as I always savor it. Slowly, I doppel into form, softly, gently: smoothing the edges and planes of personality, shimmering briefly in the haze of heated air . . . I become.

I have dark hair, light skin, rough and calloused hands. The fingers are stained brown from working with the soil, and the buds of small blisters hump in the web of my thumb, and along the stem of each short finger. I am dressed in coarse blue cloth spun from some

woolen flax now faded with age; it swoops down from my chest, it bound tightly at my waist, flares out again to my knees. My knees are red and sore—but hardening, roughening. I have been working in a field on my knees, and the work is new to me. I have no sandals, but already my soles are hard: I have traveled a long way. It is there, in my appearance.

There are other things, more subtle things. The color of my eyes, the thickness of my beard, the money in my purse, even the wood of my walking stick—all of it generates quickly (but slowly), hastily (but carefully). I take pride in my own creation.

And one last thing: the time sense. It is to be refocused; I shudder as the chill throbs through me, and then leaves me, and in the next moment, I stood by the side of a gray, dusty road, looking up into the glare of the noon sun, Yarn, bright and colorless at its zenith. Beyond, winding into the violet distance, the road cut raggedly to the western cliffs. Bordering the road were fields of waving grass, bright green in the glow of dawning Yimus in the west. Yimus, second sun of the twin-sun system, moving in its erratic biannual path about Yarn, the primary. The planet moved in orbit about Yarn, an orbit which brought it under the influence of Yimus every second summer. It was a time of upheaval,





of earthquakes and tidal waves, of volcanic stirrings. This period lasted from six to nine months before the planet swung to the other side of Yarn, away from the secondary star, returning to a relative calm. Yimus rose in the west. It was a time of stress—the very air seemed to pulse with tension.

I blinked against the sunlight, turned from the west and looked east, where mountains eased against the far horizon, rolling from north to south. Shading my eyes from the glare, I peered at the trail of dust twisting toward me: a wagon. It bounced along on the ruts and pits of the untended dirt road, drawn by two sweating stallions; a harried-looking driver whipped the beasts, pushing them to greater speeds. I watched, waiting by the side of the road until the wagon drew near enough to hail. I stepped out and called to the driver.

"Ho! Ho, stranger!"

He drew hard on the reins, cursing and shouting "chio!" at his stallions, tugging fiercely on the leathers as the horses kicked and snarled to a halt. The wagon slid forward and jounced back; objects jerked on the wooden boards behind the driver's seat, boxes shifting against barrels filled with grain, sliding back against crates crowded with six or seven squawking geese. He

grinned at me from under a wide-brimmed hat, gestured with his chin toward the rear of the cart. "You're welcome to a ride, traveler, if it's a ride you want. I've no money, and little use for it too, I'll tell ye that. Trade is my business. I ride west to Tastar for the Festival of Three Suns."

"Good enough," I said, and smiled. It felt odd, crinkling the sides of my face, pulling my lips back from firm teeth. "The walk has already wearied me some, and no more than two days have passed. The heat is stifling." I clambered over the side and settled into a more or less comfortable position against a bale of hay. The driver glanced back and grunted sympathetically. "Aye. It worsens each Sun. Surely as children we found it not so bad as *this*." He clucked at his horses, whipped them. We started forward, slowly.

"As children, we had energy," I said over the clatter of horse-hooves. "Aging takes it from you—and gives nothing but creaking bones in turn."

He laughed. "You speak it well, stranger. Have a name?"

"Kar D'neill."

"Kar Jyrri."

I nodded silently, and kept my silence, gazing up at the yellowish clouds, grayish wisps spotted with brown. Past the clouds, the blue sky moved gently, strangely: it

was odd, the thought, that beyond that overturned bowl lay the stars. I closed my eyes, letting the sunlight sweat the weariness from my pores.

"I see by your dress you're a traveler . . ." the driver said, distantly.

"I am."

"Do you see much of the land?"

"When it's not so hot. I've been about."

"*Ahhh*. That's the way it is with the young. Traveling. I remember when—but that's past. Do you enjoy it?"

"I've little else with which to pass the time. Work doesn't quite agree with me."

He chuckled. "Does it agree with anyone? But it must be good to do what you want, when you want, and walk where you will. Once, I would have been like you . . . but things change. Things change. One must play new roles, and the role of youth goes too quickly from our lives, eh, Kar D'neill?"

I looked up at him. He sat hunched over his reigns, blinking out at the melting vista ahead, the shifting waves of heat which overlaid the dusty road. His face was darkened by the shadow from his hat.

"Yes," I agreed quietly. "It goes quickly."

Briefly, I touched his mind and read the unvoiced regret, the re-

signed acceptance of all that had been, all that would be. The dreams were gone. It was the same here as everywhere; even as this world's language carried words with meanings so close to those on other, different planets, so its common philosophy paralleled the dominant theme in so many lands. There were too many dreams cut short, too many fights for the self—lost.

As we jogged along the twisting path, I touched and played the chords of his mind, changing, molding, engineering a subtly better construct than the one I'd found. There were many dark spots in his mind. I added light and brightness; and in balance, there were light spots which I dulled. I cleansed. I balanced. I changed.

Soon, we reached Tastar, a sprawling "city" on the foothills of the nearer range of western mountains. The city was set strategically at the intersection of the two major trade routes from the north and east. And yet, it was more than just a commercial city; it was a religious mecca as well. As Mira was on Kra, as Ju had been on Genia IV, as Rome had been on Old Terra, as Demescus is on Tyrus, Tastar was the port of worship for an entire world—and it thrived majestically during the Festival of the Three Suns.

Pulling the cart up before a medium sized hostel, Kar Jyrri

relaxed against the backboard of his seat, chewing meditatively on the thick of his thumb as I swung off the back of the wagon. His head turned as I held up my hand. "Many thanks, Kar Jyrri."

He grunted and gripped my hand, formally. His own was stiff and wrinkled; wind baked. His eyes met mine for an instant, and he smiled. "My pleasure, stranger," he said. "Perhaps we'll meet again before the festival days are over. It was good talking with you. Very good."

I tightened my grip, then released his hand. He grinned again, and then returned to his horses, whipped them, and with a hand raised in farewell, he rumbled down the sunwarmed street, carreened around a corner, and was gone.

FOR A SHORT TIME that night I wandered the streets and alleys of Tastar, reaching into the minds of the men and women gathered in knots and groups at the corners and by the stalls selling relics and ward-stones; reaching, I brushed the surface of their thoughts, and delved deeper . . . finding only emptiness. The dreams, the hopes, the aspirations—were gone.

I didn't bother with the religious ceremonies. They meant nothing to me, or to my mission. Tastar's fete merely provided an opportunity to study its people, and probe for a common unity, some

factor approaching the universal . . . a norm, if you will, of their reality.

Each world has its dreamers, its stargazers, its mystics—without them, society stagnates. Simply: life dies without vision. Slowly, and with building horror, I began to realize that this earth was drained . . . and I searched, instead, for the reasons why. And found images.

So:

*Nightmare hoards of darkness, beating breast-heartless, throbbing and screaming, flowing, shrieking down tunnels of emptiness, deserted, mindless moments of horror and alone . . .*

*"Why?" my mind questioned: "Why?" Listen, the stirrings answered, listen: the echoes of despair, the cries, the wails of pain and agony . . . the torturous final sufferings . . .*

*The death.*

*"Why? Why?"*

*And it came, buried in the pits of a thousand minds, the over-image, the single, stark truth:*

*The sun.*

For them, their devil and their god, their despair and their hope, was their sun.

Or rather, Yimus. It made sense: to each world, a dreamer—but who can dream, when madness burns the sky, boiling water from the brain, juices from the eyes, blood from the skin? Upheaval: the word

had meant little to me before, I'd absorbed only the words, their definitions—but not their meanings. Now I understood: fathers would watch their children die, mothers feel the life in their wombs shrivel, husbands hold their dying brides—and none could know who would live, from one year to the next, nor could they care. Pain, after all, had a secret remedy: acceptance, stoic acceptance. Yes. I understood; for a moment, I almost cried.

Unfortunately, it didn't matter. A balance must be struck.

Balance: between light and darkness, hope and despair. It was the cosmic equation—all must balance in the universe, in order that the universe be sane.

Compare: a mosaic, unstructured, is irrational.

Compare: a universe, unbalanced, is chaos.

And on this world, this insignificant, weakling world of Three Suns, the balance would be *struck*...

"OH." SHE BLINKED up at me, startled. "Please—please, excuse me!"

"The fault is mine, Ker."

She frowned, then smiled, hesitantly; a soft, gentle girl, milky-white skin, dark, deep eyes of gold and black, bluish hair tumbling to her waist—a slim, lacy shift draped loosely across her shoulders

and caught beneath her bosom. I smiled back at her.

"I was walking blindly—"

I said, "No matter," and took her arm protectively. "The crowds. They can disorient even the most wary strollers. Please, allow me..."

Guiding her with a hand pressed lightly to her back, I led her through the crowd, dodging several jutting elbows, dropping back and into a dimly lit alley. She gaped up at me, breathless. I studied her, touched her mind: cool, pastel—like a summer meadow on Kalvingald, mellow under evening moons: her mind was like that. And there, beneath the oppressed emotions and unoppressive thoughts: the hopes, small, untainted mounds. Sanity, in a world of madness.

I said reassuringly, "Don't be afraid, Ker. I wish you no harm."

"I shouldn't stand alone with you."

"There are many things one shouldn't do, and yet..." I shrugged.

"You might be anyone," she said; she looked past me, then back at me, her smile still soft and receptive.

"I am anyone. And you—you might be anyone. What of it? Do we pass each other for lack of an introduction?" Stepping back, I swept my hand forward, bowed slightly. "Kar D'neill."

She laughed. "Ker lo. Does that make it proper?"

"Would anything?"

"You may be an evil man."

"But I'm not. I'm a stranger, just a stranger. But enough, hmmm? I know your name, and you know mine—and that's less than nothing. Who are you, Ker lo? Where do you come from?"

"From the north—we journey south each Sun, I since my twelfth year, sixth Sun. I've been to the festival four times. But . . . my father is waiting for me, Kar D'neill. I must go."

I held up a hand. "Not till I have your word we'll meet again. Come to the altar this evening—"

"Yet again?" The light from a nearby door lantern caught and danced in her eyes. "You've seen me once, falsely, from a meeting in a crowd: must you compound your boldness?"

"They cannot slave me twice."

She thought for a moment, the edge of a white tooth showing where she worried her underlip. I was tempted to touch her mind, but resisted the impulse: I cannot say why, or why I cared. Finally she nodded, a quick bob which shook her mane, down, then up again. "But only for a short time," she warned. "Only for a minute, at most."

I grinned and she slipped past me, smiling, and smiling still, she disappeared into the crowd.

Seconds later, the shock hit me, and my stomach turned.

I am a beast.

(ETERNALLY, WE QUESTION ourselves—why this decision, why that movement, why that turn of phrase? What makes us turn the good into black, rending it into useless bits of once-clean, losing the meaning with our mental sins? Why do our minds depart, to return only *after* the deed is done?

(Why do we question, when it would be so much easier to just rest, and accept what we've done . . . and not have to heed the accusations of our souls.

(These questions last but an instant, until they replace themselves with new concerns and considerations, and on, and on, until we pause, remember, and in an instant, it floods. . . .

(Why do we need, against all sense?

(Why do we *need*?

(It's a question I no longer wish to ponder.)

NIGHT FESTIVAL: to the east, a hollow, cratered form glows into dim existence, the distant midnight moon, riding the horizon for a brief span, then vanishing once more. The night star, third star of the Three Suns. While it swings across the night sky, it is a flickering observer of the Ritual of the Sun; and when it sinks, it steals

with it all but the faintest starlight, and the night festival, in darkness, begins.

Touching minds, I found fear beneath the joy of the revel; the people were like automatons, performing the rites in senseless oblivion. They felt nothing, reacted to nothing, acted only. It was sad, disquieting, and I kept myself apart from the masses, sipping the thin beer I'd bought at one of the stalls. The beer was warm and sour, but it dulled my outward perceptions, at least, which was what I wanted and needed most, for the festival appalled me, in a way I couldn't explain. I shied from the touch of those around me, disgusted by the stink of brew on their stained and slipping clothes. One man spiraled against me, gripping my arm to support himself. I disengaged his grip and edged him away. He stumbled and fell against a singing girl. I finished my beer and made my way to the altar, where I waited under the pillars of the roofless Temple.

There was movement by my side, a wafting scent. As I turned, she touched my arm, met my gaze. "You're late," I said.

"You waited long, Kar D'neill?"

"Only since the Rites. Not long." I took her hand in mine and gestured with my chin toward the path leading away from Tastar. "A walk, Ker. I'd like to feel the country spaces on a night like

this."

After a moment's hesitation, she followed. We moved through the shifting press of folk, edging sideways past pockets of emptiness, slipping free and striding along the grass-pocked path winding down the hillside. She kept my pace, moving in quick steps when she felt herself dropping behind, slowing, then catching up again. I let the air into my lungs. It was cold, bitter. Inhaling again, I held the breath, thrilling to the sensation of my heart pounding strongly in my chest, the rush of blood in the capillaries of my ears, the rasp of air through my lips—the sounds of life and sensation. They came to me infrequently, and I relished them when they did. (Perhaps, in this, lies the reason for my actions.)

"Why here?" she asked.

I eased down onto the grass swelling about the base of an ancient tree. Overhead, the leaves whispered in the wind. "A place," I said, "only a place. Does it matter where?"

"Only to a romantic," she said, softly. She came down beside me and nestled delicately into the crook of my arm. Her face relaxed, and we sat in silence in the lee of the tree, enveloped by the green odors of the night, listening to the small animal sounds from the field below. Wind rustled, again, and then again, brushing the hair from my face, flattening the

loose folds of my shift: warm wind, from the south. I closed my eyes, resting from thought. After the heat of the day, the evening was cool, soothing. In my arms, the girl shifted; I turned toward her, and for a time, there was movement, touching, the giving of senses. It billowed with me: the flow of the night, the wind, the sense of the air, the lingering fire of the suns, Yimus and Yarn: all the sensations of space, of physical reality, building, churning. I lost myself. I moved within her. She whispered something, then cried out, and forgetting myself, I reached within her mind, and drew her into mine.

She gasped:

*Fear, panic, confusion, rising, falling, twisting, terror—*

*Soothing impulses, light, formless welcome—*

*Panic: fear—*

*Again, the soothing, firm, holding as hands held, teaching—*

*Whimpering, a small cry—"Who are you?"—mindcry—*

*Not answering, holding, gathering in, tender—*

*"Who are you—?"*

*Shame, realization—tender, gathering—release—*

I withdrew, pushed myself up, resting against the rough bark of the tree. Fire boiled inside me.

She was there, her eyes moist, face unsure and frightened, the faintest trace of sweat moisture

glistening on her brow. "Tell me," she whispered. "I . . . saw things. But not this—not *who*—" Her fingers fell on my arm—tentatively. I could sense the terror inside her.

"I am what you see," I answered.

"No," she said, her voice quivering. "I saw a thousand worlds, a forest of suns. You're a stranger to me, Kar D'neill . . . *who are you?*"

It was wrong: I hadn't meant it to be this way. I'd needed, and I'd taken, and it should have ended there. But no—in this flesh, I was a slave to sensation. I opened my eyes and looked at her. The lines had returned to her face; her upper lip was wet and trembling. Her eyes begged an answer. I thought I had no choice.

"You wish to see?" It was wrong, wrong—"Come."

And I took her to the nexus of forever.

WE SPEAK OF DREAMS, of lost dreams and abandoned hopes. In that endless Walk, I found myself lacking the answers to her many questions, and to questions of my own: lacking, in part, the true questions. For each creature there is *one* moment, an instant of total realization. My moment came on the Walk, when she touched my arm, when she held me for support against the wonders she saw, when she looked to me in trust. The moment came, and I, the beast, let it pass.

(We dream, yes; we dream—oblivious to our dreams.)

TIME FLICKERED to accept us; we passed in, and we returned, in the instant we left.

Somehow, in a manner I could only sense, the night had changed. There was metallic taste to the air, a thickness like fog, or smoke. I puzzled at it. Beside me, she spoke.

"Have I seen God?"

I looked at her. "Not God. Just a man, perhaps not like other men in all things . . . but a man." I smiled.

Watching my eyes: "There was something. Something that came into my mind, about *balance* . . ."

I nodded. "There is balance in all things, between the light and the dark, the sweet and the bitter. Creation is the recreation of order from chaos. But this is familiar to you."

She shook her head; her hair tossed like a film across the starlight. "No. You thought of another kind of balance—I felt it, just as we left that . . . place. It came to me, dimly, but strangely clear."

I was silent.

"Must you?" Her voice was pleading as she tightened her grasp on my arm. "Must it be here? There is so much . . . so very much . . ."

Her voice trailed off. Slowly, her grip loosened. Her hand fell limply away.

Pause.

"How can one love and yet hate?"

I would not have thought it possible." She unwound, straightening, brushing the wrinkles from her dress. She turned from me, and her words drifted over her shoulder, low, almost lost in the rustle of the leaves above. "There was so much you showed me . . . so much. But there was still an *emptiness* . . ."

She stood, silently, in the shadow of the tree. I studied her. Something knifed inside me. She started forward slowly, then hurried, up the knoll toward the city of Tastar, where the night festival still sang, oblivious.

I watched her leave; she meant nothing to me, nothing. Nothing. Perhaps *that* was the hateful part: that even after taking her hand, and sharing the Walk, even after this, I could find nothing in myself for her . . . she was no more to me than—than these shadows of night. A physical presence; a sensation. No more.

At last, I phased out of reality. For a moment: gray.

Then: light flooded about me, golden and pink, and purple, ribbons of color winding about, then dissolving. I looked at the world of earth: there was light and dark, there was black, white, blue. In itself, a balance of sorts, between the balance of the mind and the balance of the flesh. In itself, whole and perfect—and in balance.

But in the greater mosaic of the



Universe, the world was just slightly . . . askew.

It was simple and quick work:  
I pulled  
punched  
straightened  
. . . and stretched . . .

And the world of the Three Suns was gone, split sideways into infinity, spreading to nothingness, a screaming sore on the background of my memory that quickly healed over, faded into glistening scar tissue . . . and was gone.

I stared at the time-caught fragment of empty space where once a million faces had rested. Perhaps there should have been emotion. Perhaps there should have been a tear.

But I . . . I am a beast.  
I felt nothing.

(AND WHEN OUR END COMES, and we meet ourselves, and we can see ourselves—there must be a final question: why this? Why this, *then*? A question of *one* action, one

callous action upon which a life totters, a pivot on which all meaning spins—and is lost.

(Why did I take form on that world?

(Why did I give what was not mine to give, and take what was not mine to take?

(Why did I allow one person to suffer, if only for an instant, with the knowledge of what was to come, a burden not hers to bear?

(Why, *why*?

(The questions without answers: they scar you, and never truly fade, until that end, when they converge and present themselves and demand the answer you cannot give. The questions. The questions.

(Gods.—I *am* a beast.)

I WALK the Star Path. I walk the lonely road. Here it is all-darkness, and the pale light casts no shadow. Here it is cool, in this place between the lives.

In this emptiness.

—GERARD F. CONWAY

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# **JUPITER PROJECT**

**GREGORY BENFORD**

**(Second of Two Parts)**

**Illustrated by DON DAVIS**

*Never in the nine years the station had orbited Jupiter had there been so much activity on the surface of the giant planet—and now the Jupiter Project was being cancelled, by bureaucrats on Earth!*

## **SYNOPSIS**

JOHN BOWLES is a seventeen-year-old resident of *The Can*, an experimental research satellite which orbits the planet Jupiter in the middle of the twenty-first century. Life on the large station has been enriched as much as possible—with sports, interesting optical designs on the corridor walls, and with regular recreational visits to *Ganymede*, a Jovian moon which is presently undergoing terraforming (within about one hundred years, it may be fully habitable; right now only a small part, under a pressurized dome, contains a livable environment).

Bowles and his friend, ZAK (who aspires to greatness and keeps a diary because he is convinced he will some day be able to publish it and retire on the royalties) find themselves joined on the latest *Ganymede* run by YURI SAGDAEFF, a boy of about their age who carries a perpetual chip on his shoulder and seems to live only to advance himself politically. When he discovers that John and Zak customarily take out a *Ganymedian Walker* to check the outlying stations on that moon (where automatic measurements are being made of atmospheric pressure, temperature, etc.), he regards this as a ploy to advance their careers—and when Zak sprains his ankle skiing (within the dome it's livable but cold and skiing is the major recreational sport), Yuri decides to volunteer for his place in the *Walker*.



*Yuri's pride and his unwillingness to ask John for advice or help cause them a serious problem when, at a supply depot, he fouls a hose connection and they find themselves trapped between supply points without enough oxygen to go on. Yuri wants, at this point, to call the main base for emergency help, but to John not only is this an admission of defeat but he is aware that "help" would require the use of the Sagan, the main shuttle ship that ferries between The Can and Ganymede, and he has a horror of making demands on this level—it would totally destroy the ship's schedule.*

*Fortunately, John is able to solve the problem and it goes unreported—as far as he knows. However, when he returns to The Can he discovers that Yuri had made a report on his own—in which it was John who fouled the connections and Yuri who saved the day.*

*The Can's population is gathered for an amateur night of entertainment and John is waiting in the wings to play his guitar when the station's commander, COMMANDER AARONS steps out to make a sombre announcement: ISHI MOTO, who was a shuttle pilot, has been killed by a stray meteorite. Ishi was another of John's friends, and the news hits him hard.*

## Chapter 8

THERE ISN'T MUCH to say about the rest of that night. At first I could not believe it: as soon as the curtain was drawn I rushed over to Commander Aarons and asked, disbelieving, if I had heard him correctly. Hadn't it been someone else, somebody with a name that sounded like Ishi?

Even as I said it I knew I was trying to run away from the truth, cover it up, pretend it wasn't there. I turned away from the Commander and automatically, mechanically put my guitar back in its case.

I remember making my way out of the auditorium. I met my

parents. I talked to Jenny. She was crying and I suddenly found that I was, too. Jenny and I stood in the middle of the crowd, crying and sobbing and holding each other, almost without knowing what we were doing. It was incredible. Ishi, gone. Forever.

After a few moments I felt better. Zak was there; I hadn't seen him before. He took Jenny away and I left with my parents. Suddenly I wanted to get away from that place and away from people.

We said nothing during the walk home. The terrible thing was that there was nothing to do. I guess there never is. Our society has no required ritual for friends and relatives of someone who has died. In-

stead, they sit and stare at each other and feel awkward, useless. They have no way to take the edge off their grief. I thought about that for a while until I realized that I was using the idea as a way to avoid thinking about Ishi, because that was too painful. And, of course, that thought made me feel even more rotten.

When we got home I went to my room. There didn't seem to be anything to say to my parents, or to anybody. Ishi's job had been one of the dangerous ones, sure, but the computed chances of a man ever being hit were infinitesimal. His death was a fantastic piece of bad luck. Space suits provide some protection against low-velocity meteorites, but there isn't much that can be done about a pebble traveling as fast as a rifle bullet.

The Lab does what it can. We've searched out the dust clouds and small groups of meteorites orbiting Jupiter. When a shuttle goes out, the trajectory is programmed to keep the craft moving in the same direction as the matter around it, so that most of the tiny debris isn't zipping by the shuttle. The best insurance is a fast trip, so the pilot spends as little time as possible outside the Can.

All these things are fine, but they can't add up to absolute safety. We don't know enough about the junk circling Jupiter and we never will—radar won't pick up small chips of

rock.

So I laid in bed and thought about these things. And remembered Ishi. And wondered how many times in my life I would say goodbye to a friend, suspecting nothing, and then never see him again. It took me a long time to get to sleep.

THE NEXT MORNING our family went to extend condolences to Ishi's family. We sat on the floor and conversed, almost whispering. Most of our talk was of inconsequential things: flower arranging, the comings and goings of people we both knew, the subtlety of water color prints. We spoke only briefly of Ishi.

We attended the service for Ishi together. His body was returned to the life cycle of the Can by breaking it down and distributing the elements to the chemical vats. Preserving the body and things of that sort are barbarian.

We followed the Moto family to their home and spoke for a long while. We were served green tea. We smiled, nodded. We went home.

I found the experience strangely satisfying. The Moto family maintained its serenity; it even bouyed up the friends who came to call. I promised myself that I would not let the Moto family slip out of contact; I could learn much from them.

I moped around the apartment

for half an hour and then went to class. I was having trouble with calculus and needed a session with the teaching machines. Our machines are better than the run-of-the-mill ones used in classrooms Earthside—they're linked to the Lab computer, which can do two dozen different jobs at once and still fool you into thinking it's as smart as a human being, even though the computer is only using a fraction of its capacity.

If you can justify the expense, you can get a big slice of the computer's capability assigned to you. Then "David"—that's what the computer techs call it (or rather, him)—sounds like a genius. You can discuss quantum mechanics, economic theory, stellar exploration or theology with David and he can give solid, well-researched answers as fast as you can read them. (I tried theology; he said God was one of man's better ideas.) He's a gift from heaven when you're doing a term paper. On the other hand, David has a weak personality and never makes a joke. Machines have their limitations; however, men don't. One of these days some engineer will give David a sense of humor and overnight he'll become a television personality. Until then, though, I find him a bit dull.

I spent two hours with David, wading knee deep through calculus exercises. David pounds away at a point until you feel as though

you've been sandbagged. Then, just when you're sure you are a mental defective, you understand—usually because David has finally found the way to present an idea so that it fits your particular bias.

David isn't just a storage bank for a lot of information. He is a psychologist, a judge and a coach; just like a human teacher, only many times faster.

This time he gave me a real workout. I left the booth feeling groggy. Zak was outside, looking the other way down a corridor.

"Directing traffic?" I said.

"No, just wondering why Yuri beat it."

"He was out here?"

"Until a second ago, yes. I was going to ask him something and he ducked away."

"That was just when I came out?"

"I guess so. What's up?"

"Let's go have some coffee. I'll bring you up to date."

After I had told him Zak whistled and rocked back in his chair. "A clever boy, that Yuri. No mouth breather, he. Who would have suspected he was such a snake?"

"You."

"I was prejudiced from the start. The question of the hour is, now that you are in the soup, how do we get you out?"

"My father will talk to the Commander."

"And our good Commander,

with contradicting testimony and all the evidence on one side—"

"Will believe Yuri's story."

"True. The man has his limitations."

"I'm going to forget the whole thing." I shrugged. "Yuri has me boxed in."

"The Bowles I know doesn't give up."

"The Bowles you know is no fool, either. Commander Aarons can't do anything, officially, without evidence. His hands are tied. There's no use in my whining to him about it."

"A point, a definite point."

"Anyway, compared to what happened to Ishi, this little scramble is, well, pretty small stuff."

Zak's face clouded over. "Yes," he said. I wished I hadn't mentioned Ishi.

"Look, I think I'll go put in some time in Monitoring," I said, getting up. "My watch comes up in an hour and I might as well try being early once, just as an experiment. Take—"

"John Bowles?" A secretary from down the hall stuck her head in the door.

"Yes?"

"There is a call for you. You can take it on the student recreation center telephone."

"Oh, okay." I hoisted aboard my notes, waved to Zak and jogged down the hall to the rec center. The

corridor curved up, giving the feeling that you were running uphill. In a sense I was because I was moving counter to the Can's rotation, which is harder than going the opposite way. For short distances the effect is unnoticable; only when you're going nearly halfway around the rim of the Can does it pay to stop and think about the fastest way to travel.

I found the rec center phone and picked it up.

"John?" my father's voice said.

"What's up? I was headed toward Monitoring—"

"Never mind that. I have been speaking to Commander Aarons. He wishes to talk to you. In his office."

WHEN I GOT THERE Jenny was seated quietly on a couch. That surprised me more than anything else; what could she be doing here?

Dad was sitting in a chair, holding a sheaf of papers. The Commander looked up when I came in, said hello and motioned me to a chair.

"Your father brought to my attention a somewhat different version of the events on Ganymede," Commander Aarons said, leaning forward and resting his folded hands on his desk top. "I do not mind saying that I am in something of a quandary. I must take a judicial position, since there exists conflicting testimony. At the same time

there is no way to determine the truth; there were no other witnesses."

He stopped and grimaced. The movement tilted his moustache at an angle and gave him a red nose. "Therefore, young Mister Bowles, I shall drop the matter. No action will be taken. Both your and Yuri Sagdaeff's stories are now known to me; I may or may not consider them in future evaluations of your performance."

The Commander stopped and let out a breath. "And that is that." He reached out and flipped off a switch set into the top of his desk. "That's the official recording for ship's log. As far as regulations go the matter is now dead." He looked at me and smiled. "But that is not the reason I had your father call you."

"Sir?"

"I was wondering if you would be interested in changing jobs. You would work with Miss Fleming, here."

"Huh? Outside?"

"Operating a shuttle," my father said, "and making satellite repairs. The job Ishi had."

Now I understood why Jenny was here. "Who recommended me?"

The Commander tapped a finger-nail on the display screen mounted flat into his desk top. I could see some typed entries in what looked like a personnel form. "Your record," he said. "You know electronics. You have maneuvered

one-man shuttle craft into parking stations."

"And you have good no-gee reflexes," Dad said.

"I see." I still didn't like the idea of getting a job because Jenny put my name in. "But why so soon? Ishi's job wasn't all that urgent. Why do you need a replacement right away?"

"The storms," Jenny said.

I looked over at her. It was the first sound she had made since I came in the room.

"Correct," my father said. "They are coming more often now and they are more intense. The entire upper atmosphere of Jupiter, particularly near the poles, seems to be in turmoil. The satellites keep track of this; if they fail we're left with nothing."

"One is broadcasting intermittently right now," Jenny said.

"And we must have one person on duty to repair them at all times," Commander Aarons said.

I thought for a moment. Sure, it was dangerous. So was breathing, if you did it long enough. And Ishi hadn't been afraid.

"Sounds reasonable to me," I said. "I'll be glad to switch over from Monitoring, if you need me."

"Ah. Good." Commander Aarons stood up. "Best of luck." He shook my hand.

When we were out of the office and Dad had gone back to Monitoring I turned to Jenny and said,



"Was this your idea?"

"Mine? Don't be silly. Commander Aarons called me in just a few minutes before you. He wanted to know if I would mind working with you."

"Okay. Sorry. I guess I'm just a little edgy today. The last twenty-four hours hasn't done me a whole lot of good."

Jenny looked sad. "I know what you mean."

We walked down to the student rec enter to get something to eat. We had to stand in line.

"I think we ought to go down to the main bay and begin going over your shuttle," Jenny said.

"Huh?"

"Well, you're going to have to learn how to operate it sometime."

"You mean you're supposed to teach me?"

"Who else?"

"Well. . ."

"Say, is there some reason you don't want to work with me?"

"Uh, no," I lied.

Look: Jenny is a nice girl, pretty, smart, reliable. But there was one very good reason why I didn't want to spend too much time with her—I wasn't ready for it.

I'm a romantic. If I hadn't figured it out for myself, Zak's analytical eye would have let me in on the secret pretty soon; he's mentioned it often enough. Being a romantic isn't a terrible curse, but in my situation I knew I couldn't

afford it. If I spent a lot of time around Jenny, working on a job and really getting to know her day in and day out, the result was obvious: I'd fall in love.

Okay, fine. Love. That's what all the songs and musical comedies and novels are about. It makes the world go 'round, et cetera, and ad infinitum. Our greatest natural resource.

But not for me. I wasn't ready for it. I had plans for the future—places to go, things to learn. I mentioned all this to Dad once and he shook his head and said, "Love isn't like plotting out a circuit diagram, John. It is like falling down a flight of stairs. It happens all at once and you can't plan it. Don't try."

Maybe Dad's right, I can't figure it all out first. But I can keep my eyes open. I can stay out of situations that are going to get me tangled up, just when that's the last thing in the world I need.

So I said to Jenny, "I haven't got anything against working with you. I didn't know we'd be going out in a shuttle so fast. I'll have to bone up."

"It could not be because you are afraid, of course." I turned. Yuri was standing next to us in line.

"Get away, Sagdaeff," I said.

"Don't be silly, Yuri," Jenny said. "John isn't afraid."

"Oh, I don't know about that. He did not react very well under stress

on Ganymede."

"How would you like a flat nose?" I said.

"Ah ha, threatening violence. The last resort of the incompetent. I wonder what Commander Aarons would think if you were to hit me in public?"

"Let's find out," I said, raising my arms.

"Yuri! John! Stop it. Yuri, go away. You started it."

"I merely came over to congratulate John on his new position."

"How did you know?" I said.

"Rumors, rumors. And I happened to be talking to the Commander's secretary when she was typing up the change of status report." Yuri smiled coldly at me.

Jenny said: "Yuri. . ."

"All right, I am leaving." He walked away.

"What was *that* all about?" Jenny said. "Did it have anything to do with what Commander Aarons said?"

So I told her about Ganymede and the air hose. It was already getting to be an old story.

"I see," Jenny said, thoughtfully chewing a sandwich. (By this time we had been through the line.) "That explains a lot of Yuri's behavior."

"It does?"

"Of course. Look," she said, tossing her head to get some brown curls out of her eyes, "it must have been a hard thing for Yuri to have

to admit to himself that he made a big mistake with the air hose. It hurt him."

"Hurt his ego, you mean. It makes a big target."

"All right, it damaged his self image. He is miffed. And he's taking it out on you."

"Why me? I saved him."

"You saw him make the mistake, too."

"This sounds pretty twisted to me."

"Maybe it is, but *something* must be making him act this way."

"Let's make a deal," I said, patting her hand. "You don't psychoanalyze me and I promise not to run berserk. Okay?"

"I didn't know you were about to."

"Well, I might if people keep giving me advice. Come on, let's get to work. Is the *Ballerina* ready?"

She got up, straightening her blouse, and said, "Yes, but that's not the shuttle we'll be using to train you."

"Oh? Ishi's, then. What's its name?"

"He never gave it one," she said as we left the cafeteria. "It was entered in the log by its inventory number."

"I'll name it myself, then."

"What?"

"*Roadhog*," I said.

We suited up and cycled through the Can's main lock. The vehicle bay is just outside the lock, but the

bay isn't a particular room you can point at—it's simply a big open space in the hollow part of the Can. All the small-sized vehicles are kept there and secured with elastic tie lines, to be sure they don't bang into each other. All along the inner face of the Can are slots for berthing; when a vehicle needs to be fueled or worked over, it is pulled into a berth. Otherwise it's moored a good distance from the Can's skin, in high vacuum that does it no harm.

Jenny and I clipped on to the mooring lines and pushed off. After a moment of coasting I turned so my feet pointed toward the shuttle and squirted my attitude jets. That slowed me to a crawl and I unclipped from the line just as the shuttle swelled up to block my view of the opposite inner wall of the Can.

I swung around, found a pipe and attached my own suit tie line to it. The shuttles are all different: each one was thrown together with whatever spare parts came to hand. The *Roadhog*—I'd silently christened it the moment my glove touched the pipe—looked like a conglomerate of castoffs until you studied the structure.

It was a bit like an automobile chassis, all bones and no skin. The pilot was belted into a couch at the center. He was surrounded by pipes and struts and fuel tanks, without really obscuring his view. A small ion engine was mounted behind

him. The whole thing was lumpy but balanced; spacecraft have to be stable.

I glided over to the pilot's couch and perched on top of the back rest. Around us, never closer than twenty yards, were other craft. A few had their running lights on; they were being checked over or preparing to go out. A big tube-shaped cargo hauler was moored right above us, shutting out the view through the bore of the Can. Below I could see stars, one of them a sharp, fierce blue diamond.

I heard a faint *clank* as Jenny bumped into the shuttle. She secured her suit safety line and came swarming over to me.

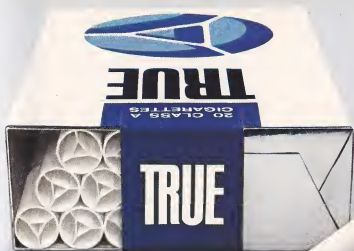
She touched helmets. "You know how to use the air tanks on this one, don't you?"

"Sure," I said.

"Take us over there, then," she said, pointing to Berth G.

I buckled myself into the pilot couch and reached out gingerly for the controls. You don't use an ion engine inside the Can's bay, or even nearby if you can help it. The backwash can knock a man head over heels a hundred meters away or snarl mooring lines. So I gently thumbed in the override on the shuttle's air tanks, switched them over to the pipe system that led to the little maneuvering jets at the rear, and reached for the release button.

"Forgotten anything?" Jenny



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said.

"Huh?"

"Our mooring lines."

"Oh." I felt my face go red. I unbuckled and glided around the eight corners of the *Roadhog*, unhooking the elastic lines. They're on retrieval coils, so as soon as I let go a line it retracted toward the Can walls.

I sat back down in the couch. "All cleared, Captain."

She didn't say anything. I carefully bled a little air into the pipes and felt a satisfying tug as we got underway. I gave us little bursts of air to maneuver around the cargo hauler overhead, and cut in the gyros to keep us from tumbling.

We inched our way across the bay. I got back into the practice of looking three different directions at once; my neck started to ache. Human beings are built for navigating in two dimensions; our eyes are set in a line parallel to the ground. Outer space takes some getting used to. Even after you've trained your stomach to stop pushing the panic button when you're in no-gee conditions, you have to keep reminding yourself that up and down are just as important as sideways. The adjustment is never perfect, because you're trying to learn a set of reflexes our bodies just weren't programmed to take. That's why no-gee maneuvering takes a lot of energy—you're fighting yourself,

all the way, whether you know it or not. I suppose that's why kids like me are a little better at no-gee work and don't tire so fast; our reflexes aren't totally "set" yet.

Berth G was a square-mouthed tube with bright lights lining the inside. I edged the *Roadhog* into the slot and brought us to a stop nearly perfectly; we couldn't have been moving faster than a foot per second when we bumped into the buffer pads at the end.

Jenny patted me on the shoulder and bounded away to fasten mooring lines.

I felt good. I had proved that I could still handle a shuttle craft, despite being out of practice. And most of all, I was out in space again. It had been too long.

That was the high point. The next five hours were something less than gratifying. Jenny took me over the *Roadhog* inch by inch, making me learn every valve and meter and strut on the contraption. I had forgotten a lot; the rest I hadn't known at all.

She made me draw a flow chart for the air pipes, after letting me inspect the *Roadhog* for five minutes. I thought I'd figured it out. When she handed the clip board back to me, covered with red marks, I found out that I had gotten everything exactly backwards.

I checked out everything. Gyros, radio, first aid, fuel feeds, hauling collars, repair kit, spare parts,

search lights, electrical system, navigation, backup systems, vector integrator—you name it, I had to find it, see if it worked, explain how I would repair it if it didn't, and relate it to all the other systems it meshed with.

"Do you think you're familiar with these things now?" Jenny said.

"I'm surprised you don't have me kiss each one individually," I said. She grinned at me. I grinned back; a lock of hair had curled down between her eyes—she couldn't reach it, of course, in a space suit—and I wondered why I hadn't realized before how pretty she was.

My old romanticism again. The people I respected most were the ones who could do things. Most girls didn't fit in that category, and I—ambitious John Bowles—looked down my nose at them. What good is a girl who is just an ornament?

For some reason I had included Jenny in that group, too. These last few hours had proven me wrong. I was intrigued. Jenny was something special.

"Do you feel ready to take her out?" Jenny said. I blinked; I had been staring at her moodily, thinking, for the last minute.

"The *Roadhog* is not a her, it's a him," I said.

"Ships are always feminine, silly," she said. "There are female roadhogs, too. So what's your answer?"

"Alone?"

"Of course not. I'll be holding your hot little hand all the way." She looked at her watch. "The round trip should take about thirteen hours. It's too late to leave today."

"What's the trip for?"

"Satellite 14. A circuit component is on the fritz and the Faraday cup doesn't give reasonable readings."

I shrugged and then remembered that in a suit the gesture was invisible. "Fine. Tomorrow morning, then, huh?"

I GOT UP EARLY the next day and beat her down to the vehicle bay. I fooled around, poking my nose into some other ships moored nearby, until I got a call over suit radio, turned and saw her kicking off from the lock.

"My Captain cometh," I said.

"Not me, kid. You're in charge on this one."

"What about the *Roadhog*? Is she fueled? He, I mean."

"Don't fight it. The *Roadhog* is a she. And of course she's fueled. I'm not sloppy at maintenance."

We coasted into Berth G, freed the lines and Jenny gracefully swung into the pilot's couch. She called in to the bridge and had an updated flight plan transmitted into the shuttle computer's memory. Then I took over. I touched the fuel and oxygen gauges meaningfully, to prove I didn't trust anybody's word

about that—like any good pilot—and ran quickly through the standard checklist. Jenny sat on the flat bench next to the couch, buckled herself in and gave me the high sign.

I backed us cautiously out of the berth and brought the nose up to point at the circle of stars overhead. I gave *Roadhog* one burst of air through the rear jets and we coasted for the top of the Can in one long, clean straight line.

We glided by the black shapes of parked craft and past the curved skin of the Can. A few viewports passed—they glowed with soft light and at one a woman looked out on the bay, smiled and waved. About 150 meters away in the opposite direction was the stubby cylinder at the axis of the Can, where the squash court and some hydroponics sections were. Behind us was the Far Eye, a little white dome at the tip of the central cylinder.

The circle of stars grew as we rose toward the top of the Can. We passed the *Sagan*; thick hoses sprouted from her water tanks and led into several sockets in the Can skin. Jupiter peeked over the rim and quickly grew as we cleared the top of the Can. It was a crescent; the Can was moving sunward in its orbit.

The shuttle shifted and murmured under me. The computer program was taking over. I punched the release button on the

small control board and instantly felt a slight thrust. The ion engine had cut in. It made no noise; it's a low-impulse system.

We went straight up, away from the Lab, as though the Can was a cannon and we had been shot out of it. I was looking at Jupiter through the spaces in the *Roadhog's* floor.

"Hey," I said, "we're heading due north."

"Most observant. We're going into a polar orbit."

"Satellite 14 is in a polar orbit?"

"Nearly. Monitoring and Astrophysics are making it pretty popular. Satellite 14 is in an eccentric orbit that takes it in close to Jupiter's poles."

"So it gets the best data on the storms?"

"That's what I hear. I just fix 'em, I don't try to understand 'em. Look, you can see the storms now."

I followed her pointing finger. Near the north pole of Jupiter the bands broke and eddied and lost some of their bright orange color. I could make out tiny whirlpools that churned up the edges of the bands.

"Is a storm brewing?" I said.

"No, we're seeing the last gasp of one that peaked five days ago. Astrophysics said they didn't think another would come along for a while yet, but that's only a guess."

"What's the radiation level like during the storm?"

"High. Higher than they've ever seen before, Astrophysics says.



Why, worried?"

"Yup. I'm too young to be broiled in an electron shower. Are the shielding fields on?" I looked at my control panel.

"Yes, they went on automatically when we left the Lab. Don't worry."

"Don't mind me, I'm a natural worrier." I looked around at the superconducting bars that ring the *Roadhog*, though of course you can't *see* the magnetic fields they produce. Those bars were all that kept Jupiter's Vanallen belts from frying us alive.

Radiation is a subtle thing. You can't see it or taste it, but those little electrons and protons are better killers than a tiger. They are why the Lab wasn't orbited in close to Jupiter, within the orbit of Io.

Earth and Jupiter have one big thing in common: radiation belts. A man named Van Allen discovered them back in the early Space Age, around Earth. A little later Jupiter turned out to have them, too. Mars doesn't, or Venus, or Mercury. Reason: no magnetic fields. Earth and Jupiter generate big magnetic fields around them, and those fields trap high-energy particles that the Sun throws out.

They're called belts because that's what they look like—big donuts around Jupiter and Earth, seven or eight planetary radii in diameter. The Lab had to be located out beyond that donut or

we'd be fried with radiation.

Even as far from Jupiter as it is, the Can still has superconducting magnets all around the rim to deflect away charged particles—that's what radiation is—because the outer edge of the Vanallen donut isn't sharp, and a lot of deadly particles are still around, even that far from Jupiter.

Why don't Mars or Venus or Mercury have magnetic fields? My father tells me a planet has to do two things to produce them: first, have enough mass to squeeze its core until the metal inside melts. Second, rotate fast enough to churn the molten iron and nickel around. That forces electrical currents to flow, which makes a magnetic field. But Mars and Mercury just aren't big enough to squeeze their cores. Venus is, but it hardly rotates at all. Which is a shame, really. Mars might have been a decent place to live if it had those fields. Vanallen belts are filled with charged particles that *didn't* hit the planet; the magnetic fields deflect them away from the atmosphere and into a sort of magnetic bottle that keeps them away from the planet's surface.

Earth has that; it's safe for vulnerable human beings to walk around on. Jupiter has it; that's another reason to think life can make a go of it there. Mars hasn't, and Martian life never really had a chance; it was pelted from the start

with every bit of garbage the sun throws out.

The International Space Agency knew all this before they ever raised an expedition to Jupiter, of course; the Can is quite well equipped to deal with radiation. The *Roadhog* was a slightly different matter. It carried superconductors that could keep off medium-intensity radiation, but it couldn't stop the big stuff that crops up during radiation storms. The Can, after all, gets a lot of help from sheer mass—the Lab water tanks line the outside of the Can and stop incoming particles before they can reach the living quarters.

The *Roadhog* hasn't got that mass. It's a shuttle, engineered for speed and economy. So you don't go out in it during radiation storms.

Extra mass might have stopped the pellet that killed Ishi. Maybe there was an argument for putting shielding around the shuttles. Magnetic fields don't affect pieces of rock, because the rock is electrically neutral; only encasing a shuttle in heavy walls would make it really safe.

But I wasn't planning on applying for an insurance policy, anyway. I stopped brooding about Ishi and turned to Jenny.

"What's wrong with Satellite 14, anyway?"

"Here," she said, handing me a clip board with a maze of circuit diagrams on it. "A problem for the

student."

I found the circuit component that was fouling up pretty fast. The tough part was the Faraday cup.

The cup on most satellites, including 14, is a simple affair. It has an electrostatically charged grid open to the space around the satellite. Any charged particle that wanders by can be attracted by the grid. When it is, it picks up some added velocity and overshoots the grid—goes right through it—and runs smack into a collector. The process builds up a voltage across a capacitor. Every so often a watch officer in Monitoring—somebody like me—will call for a count from the satellite. The capacitor will be discharged, the voltage measured, and a little arithmetic gives the number of particles (usually electrons) the cup captured.

Satellite 14's cup wasn't working. I had my own idea why. I didn't think they were well designed.

"Hey, look," Jenny said. I looked down, through the *Roadhog's* floor. A brownish whirlpool, thick with blotches of red, was churning in the clouds below.

"That one reminds me of the Red Spot," I said.

"I've never seen anything like it before. Odd color."

"There are some funny things going on in that atmosphere. Old Jove is putting on a show for us."

"I wonder why."

"Come back in ten years, Maybe

we'll know then."

The nice thing about having somebody along on a trip is the reassurance you get. It's easy, out in space, to get swallowed up in the vastness of everything. Being able to talk to somebody brings things back into perspective.

So we chattered away. I'd never spent that much time alone with Jenny, and I found out a lot of things about her I didn't know. What I saw, I liked.

That's the way it went, for six hours. Yes, six. Jupiter is *big*. The *Roadhog* pushed steadily at our backs and took us inward, closer to Jupiter than Io. It also pushed us toward the north pole, so we could match orbits with Satellite 14.

We spotted a tiny dot on our left while the *Roadhog* was making final adjustments with its maneuvering jets. It grew rapidly: a silvery ball sprouting antennas and small attitude jets. It was one of the older satellites, which probably explained why it failed.

Jenny stayed in the shuttle while I coasted across to the satellite. It wasn't more than six feet across and a lot of its skin was pitted. I pulled out several shelves of circuitry, disconnected the Faraday cup and went back to Jenny.

We both looked over the parts and discussed what to do about them. That's the advantage of sending out a human being, rather than relying on multiple backup

systems—the space around Jupiter is unknown, and no engineer back on Earth can predict what will happen to his pet gadget after a few years of pounding from high-energy electrons, dust and micrometeorites. In jargonese they call it "failure to allow for contingencies."

We made a few repairs on the circuitry. The cup was worse: it had intermittent shorts and needed replacement. I didn't like the design, but I couldn't very well change it out here. Under Jenny's schoolmarm eye I did the work, glided back to the oversized silver basketball, installed it and came coasting home.

"Not bad," she said. "You took only fifty-three minutes."

"Do I pass?"

"Weeeeelll. . . yes."

I grinned. "I'll buy you a drink when we get back."

"A milkshake?"

"No, a *drink*. Maybe a beer. Alcohol, anyway. We're of age—there's no regulation against it."

"Okay. It will be the first one I've ever had, outside of home."

"Good. Let's go." I refrained from mentioning that it would be the first time in public for me, too.

We slept on the way back. I was tired from the tension that comes from carrying out delicate operations in no-gee. And we were both bored with riding the shuttle. A polar orbit was a little unusual—

Satellite 14 was one of the three that looped in close over the pole, to get readings where the magnetic fields are strongest—but six hours was a long time.

So we took our pills, buckled in securely and got over five hours of no-gee sleep. When the bridge called and woke me up I felt great.

I jockeyed *Roadhog* into the bay and we both did the refueling; it was beginning to look like we would make a good team. Most shuttle hops weren't so long and one operator would do, but on jobs like this one the bridge liked two pilots along.

I unsuited, went through the 'fresher—ever smell a space suit after somebody's been working in it over thirteen hours?—and waited for Jenny in the tube outside the women's area. I planned on taking her to the small officer's bar on one of the outer levels, where a big 3D screen gives views of Earth, and I thought we wouldn't meet anyone we knew. It was 20:00 hours, ship's time, well past the cocktail hour.

I had just leaned against the wall when Zak came loping along, panting.

"I figured you'd be here," he gasped. "Want—wanted to catch you."

"What for?"

"Commander Aarons called a shipwide meeting, it's starting right now. I thought you'd probably missed the announcement while you

were coming inside."

Jenny appeared. "What announcement? What is it?"

"Come on," Zak said.

"I think we ought to go," I said apologetically. Jenny and I looked at each other. We both shrugged. "A little later, maybe. . ."

Jenny smiled, nodded, and we followed Zak, who was already walking away. I felt bad about interrupting our little private party. Alcohol holds no fascination for me—I've had plenty of chances to drink at home, so it's nothing new—but there is something about the rituals of drinking that can cement new ties, formalize a relationship. And I suppose I wanted to make a bench mark that said, here is when I opened my eyes a little, and saw her clearly for the first time.

My romanticism again. Zak told us about a flurry of rumors that had run around the Lab during the day, most of them contradictory, and I half-listened on the way to the auditorium. The bowl was nearly filled. The TV cameras were operating, so that people who couldn't leave their posts could listen in. We found three seats together on the very last row.

The auditorium buzzed with speculation. I spotted Mom and Dad sitting together, the Motos, and several others. The lights dimmed slightly, people stopped chattering and Commander Aarons

walked to the podium at center stage. He seemed smaller than I remembered him, and awfully tired. He reached up and nervously plucked at his moustache before speaking.

"It is my duty to make a grave announcement. Two hours ago I received word from the Executive Council of the International Space Administration. For the last several weeks the Council has deliberated on the future course of research and exploration throughout the solar system.

"The discussions were extensive. Plans for construction of the first unmanned probes to the nearby stars were even considered; the Council elected to set aside such a program for the foreseeable future.

"As many of you may have suspected, it was an order of the Council that delayed the departure of the *Argosy*. I did not know why until this evening.

"We are all aware—however divorced we may be from our home planet—that the economic crisis there is steadily worsening. Overpopulation has not been solved. Raw materials are running low, despite the self-supporting mines in the asteroid belt. Gradually the 'extras' are being whittled away.

"I am afraid the Council has decided that it is the Laboratory's turn to be trimmed. No, no"—he looked up toward the top of the

bowl, directly at me—"that is far too mild a word. The Council has informed me that all research operations here and on Ganymede are to be cut. The Laboratory is finished."

## Chapter 9

SUDDENLY EVERYBODY was talking at once. The Commander let the noise build for a moment and then cut it off by raising his hand.

"The *Argosy* will leave Earth orbit within the hour. It is flying empty; none of the cargo we asked for is aboard, nor are food supplements. The Council has given orders that the Laboratory be stripped of useful scientific instruments and all personnel return to Earth on the *Argosy*."

"Impossible!" someone down front shouted.

The Commander shook his head. "It is not. The Council sent detailed plans for departure. If we squeeze, we can make it."

"But why? Why so sudden?" the same person said again.

Commander Aarons relaxed his stance and leaned slightly against the podium. He seemed glad that the formal announcement was over and he could talk normally. "We've always known that there are factions on the Council who oppose space research further away than Luna. I believe since the recent

elections they are in the driver's seat."

Mr. Jablons stood up. "Commander, we have as much patience as anyone. We all know ISA has been trying to nickel and dime us to death for years, with little cuts here and there. But this isn't a cut, it's a hangman's noose. I say we should fight it!"

"Right!"

"I'm with Jablons!"

"Very fine, gentlemen," the Commander said. "What do you propose?"

"Shoot the Council!"

Commander Aarons smiled wryly. "Impractical, I am afraid. Anyone else?"

Mrs. Moto stood up. "We are citizens of many different countries. Could we not appeal through our geographical representatives?"

"We are only a few more than five hundred people, Madam," Commander Aarons said. "We carry very little political clout."

"Senator Davidson has always supported the Lab. We can appeal to him," a voice said.

Zak stood and waved for attention from the Commander. When he got it he said, "Judging from a few hints in the legislative reports we get sandwiched into the news from Earth, Senator Davidson fought for us and lost. He has lost his position on the Advisory Board." The Commander nodded. "Anyway, a senator is a

creature half man and half horse. Normally the top half is a man. You can't expect them to set sail against the prevailing winds."

Some people nodded; others looked glum.

A woman stood. "Yes, Mrs. Schloffski?" the Commander said and I recognized her from the *Sagan*.

"Ladies and gentlemen," she said dramatically, "I have been sorely distressed at the things said here tonight. Murder and insurrection have been advocated. I think it is time the saner, wiser heads in this Laboratory are heeded—goodness knows we have not been listened to enough in the past. In all honesty, I feel that if the Commander and his staff had sought out proper council among the Laboratory members we would not be having such difficulties now. I have always thought—"

"Do you have a point, Mrs. Schloffski?" Commander Aarons said mildly.

"Of course I do. I wanted to say that, once the Council has spoken, we should all be good enough citizens to recognize that fact and act accordingly. Certainly there is no one else to blame than ourselves for the fact that we have found so little of lasting scientific interest out here—"

"Who says?"

"How would *you* know?"

"—far from our natural home." She glared at the hecklers. "I believe there are a number of women

who followed their husbands out from Earth and feel that they have sacrificed enough. The living conditions here are wretched. I imagine there will be many of us who will be *glad* to go home."

Mrs. Schloffski sat down. Her husband, sitting next to her, said something. She snapped at him and he opened his mouth and closed it again. After that he was quiet.

"Commander?" my mother said, standing. "I would like to speak for the women *I* know. We are not ready to go Earthside until our jobs are finished here. We will stand by our husbands even if we don't have clean ironed sheets every day."

There was a burst of applause. Several hands were waving to be heard. The Commander picked my father's.

"Something bothers me about your wording, Commander. You said everyone returns on the *Argosy*?"

"Correct."

"I don't believe the fusion plant and electrical generators can be left to automatic control; it's too risky. We will have to shut them down before we go."

"What's your point?" someone in the audience said.

"Without current our superconducting magnets will not work."

There was a murmur as a few people saw what Dad was driving at. Commander Aarons frowned and unconsciously tugged at his

moustache.

"Without the magnets," my father went on, "the Can won't be shielded from the Vanallen belt radiation. High-energy electrons will pass into the Laboratory. Within a year they will create enough radioactive isotopes by irradiation to make the living quarters here uninhabitable. The isotopes will be distributed randomly around the Lab, in the walls and deck. The Lab would be unlivable."

The crowd was silent for a moment. An engineer said, "You mean men couldn't come back, ever? The Can would be contaminated?"

"It looks that way."

"Doctor Yakana is in charge of radiation control. Doctor, do you agree with Dr. Bowles?"

A lanky man near the front nodded.

"Those Earthside fleabrain!" someone shouted.

"Commander!" one of the ship's officers said. "Did the Council say they were abandoning the Lab?"

Aarons sighed. "My orders say, 'The facility will be reactivated when fiscal policy permits.'"

"When they speak in Latin it's always a brushoff," Zak said to me.

The ship's officer stood up. He was Lt. Sharma, a heavy, dark man from Calcutta who ranked middle-high on the squash roster.

"Sir, I think most of us have had enough of ISA," he said. "Right?"

He turned to the audience and they answered with a storm of clapping.

"There's one thing the Council forgot. We don't have to cooperate! They can't force us—who is going to send armed men all the way out to Jupiter?"

"I say we stay!" another voice said. "Refuse to board the *Argosy*. We'll thumb our noses at 'em."

Lt. Sharma shook his head. "Lord preserve me from my friends. That isn't what I meant. All of us can't live out here indefinitely—we need trace elements in our diet, spare parts for the life system and a hundred other things."

"Okay, how long can we stick it out?" someone said.

"I am not qualified to say," Commander Aarons said. "You three"—he pointed out two bridge officers and the supervisor of Maintenance Division—"put your heads together and give us a guess."

The three men met in an aisle, murmured together for a moment while everybody watched, and nodded. "A little less than two years before we have serious trouble," one of them said.

"Thank you. I am no politician or economist, but I do not believe Earth's troubles will clear up in two years. The Council will not be able to send more ships by that time, and if we rebel now I *know* they're not going to be in the mood anyway."

Lt. Sharma looked exasperated. "Sir, that is not what I had in mind."

"Oh?"

"Most of the Can's population must return Earthside. We'll never survive, otherwise. But we don't have to leave the project deserted. Leave behind a skeleton crew to keep the superconductors working, so that someday men can come back."

My father stood up. "That sounds fine to me. We should leave a few scientists, too, to keep watch on Jupiter. Even simple close-up observations covering the time the rest of us are gone will be immensely important."

"I volunteer," Mr Jablons said.

"Me, too."

"Single men should have preference."

"That's unfair!"

"*Quiet!*" Commander Aarons tugged at his moustache. "All that will be decided later." He gazed slowly around the bowl. "I think we are all too disturbed and hot under the collar to make reasonable judgments right now. I urge you all to think this matter through carefully; your lives may depend on it."

"I ask you then to go home, discuss it among your families. In a few days we will meet again. Good evening."

There was a burst of applause as he left the podium.

Zak and I got out ahead of the



crowd and headed for my home. Jenny met us at a connecting tube and came along. It wasn't until some time later that I remembered our date; both of us had forgotten it.

"What do you think our chances are of staying on?" she asked me.

"Pretty grim. You can be sure any skeleton crew won't include us."

"Why has it got to be so few people?" Zak said. "We could cut out a lot of things, like the Gany-mede base—"

"And have us climbing the walls and getting claustrophobic?" Jenny said. "No thankee."

"Well, we could stretch the lifetime of some of our machines by not using them so much. Take your shuttles; don't send them out so often. Save fuel, too."

"And if a satellite goes on the blink we just let it sit for a month? Jenny said, tossing her head to arrange her hair. "What's the point of staying out here, if we can't get any research done?"

"I think we ought to abide by what the Commander decides and not put up a squawk," I said. "Things will be touch and go when the *Argosy* arrives, as it is."

"What do you mean?" Jenny said.

"I'm not so sure the Council will expect us to come along meekly. They might have a few soldiers on that ship."

"Oh," she said.

"The bridge officers have firearms," Zak said.

"I know. And shooting off a hand weapon in a space ship is stupid, but it might happen. One bad shot and everybody on that corridor will be breathing vacuum."

"You have a better idea?" Zak said.

"Sure," I grinned. "Hide."

We were just crossing an intersection of two tubes.

"Typical," said a familiar voice. "But I didn't think you would admit it, Bowles."

Yuri came walking up. "Admit what?" I said.

"To being a coward," Yuri said. "Going to hide from the *Argosy* crew? Count on them not missing the skeleton crew that is left behind?"

"That was the idea," I said sullenly.

"You don't want to fight it out with them like a man, eh?" He gave me his confident smile. "No, you would rather hide the skeleton crew and act like a coward." He was playing this out for the benefit of Jenny and Zak. He casually folded his arms and smirked at me.

"Don't bother him, Yuri," Jenny said. There was a kind of plaintive note in her voice. As though she were pleading for me.

"No, let him bother me," I said, and hit Yuri in the mouth.

He looked surprised, then angry.

The punch hadn't hurt him much.

"You—" he said, lowering his arms. I hit him again, harder. This time he stepped back under the blow and caught me solidly across the ribs.

That's where I lost track. I used fists, elbows and even tried butting him with my head, and meanwhile Yuri was slamming his big ham hands into me, staggering me with every punch, making my eyes blur. I knew if I kept on and watched how his balance shifted just before he punched I could avoid most of the damage. And that meant I would win, because absolutely nothing was going to stop me from beating Yuri to a pulp.

Only. . . my arms were slowing down. It took them forever to reach out and hit Yuri and when they did I could feel the shock all the way to my shoulder. I was slowing down and Yuri was speeding up.

Far away a voice said, "Hey! Break it up!" and a hand spun me around. It was one of the bridge officers, frowning at me. At the moment I couldn't remember his name; I don't think I could have remembered my own.

"If you two kids haven't got anything better to do than brawl, when the Lab is in deep trouble—"

"I'll take care of it, sir," Zak said, pulling at my sleeve. Yuri lowered his fists and snorted contemptuously at me. Jenny pushed him away. "Wo—won't happen

again," I said.

Somehow the bridge officer disappeared and I was being led down a corridor, toward home.

THE NEXT MORNING I could hardly remember what had happened. When I got home Mom patched me up, disinfected a cut over my cheek bone and gave me a sedative. It must have been more than that: I went out like a light.

Neither Mom or Dad mentioned the fight at breakfast. I didn't either; losers seldom do.

We did talk about the meeting, though. Dad came on rather pontifically about his obligation to his family and the fact that the Council might *never* send a relief expedition out to the Can's skeleton crew. It wasn't beyond ISA to drop the problem, political entanglements and all, and conveniently forget that there were men still circling Jupiter.

So, said Dad, the Bowles family would ship out on the *Argosy*. I pointed out to him that by the time the *Argosy* arrived I would be eighteen and technically a free adult. That didn't go down very well. Dad frowned and Mom started to get tears in the corners of her eyes.

"After all," I said, feeling embarrassed, "you can't be *sure* ISA won't return. I'll come Earthside then."

Dad sighed. "No, it's not that."

"What is it, then?"

"You will be a stranger to us by then, John," Mom said. "These next few years are the last ones we would ever have together as a family, and now. . ."

"Leyetta," Dad said. "Quiet. You can't shoulder the boy with that. He has to start finding his way along now."

"Well, I didn't mean it quite that way," I said uncomfortably. "I don't want to break up the family. You're all I've got. But if I have a chance to stay here. . ."

"You should take it," Dad said decisively. "I would've done the same at your age."

"Paul!"

"It's true, Leyetta. A man has got to go his own way sometime."

"Don't worry, Mom." I searched around for something to console her. "I probably won't be picked to stay, anyhow." But I knew very well that if I got the chance, I'd stay.

"If you do remain here, John," Dad said slowly, "be sure you come Earthside when you can. We don't want to lose track of you altogether."

"Huh? Why, you'll both be coming out as soon as ISA gets its head on straight."

Mom shook her head. "No, Johnnie. In a few more years there will be others, just as capable *and* younger."

"No!"

"Yes, I'm afraid so." Dad smiled slightly. "But let's not worry ourselves about that. Maybe there will be a way to weasel around the rules, who knows? The point that bothers me is that we came so close out here, we almost found life, and now it might be decades before men get another crack at it."

"I don't see how you can be so sure, Paul," Mom said. "All I hear about is an endless series of negative results."

"Atmospheric Studies is going deeper and deeper with those bathyscaphes. If there is anything there—and there *must* be—they will find it."

"Maybe they'll find something before the *Argosy* arrives," I said hopefully. "That would pull our chestnuts out of the fire."

"True," Dad sighed. "But some of our working time will be taken up with packing, shutting down the Lab and compiling all the data we already have."

"Well, we can *try*."

"Of course. But do not expect miracles."

I left shortly after that; the conversation made me uneasy. Mom and Dad didn't have much hope left. They liked life in the Can better than Earthside, despite the inconveniences—everybody did, except soreheads like Mrs. Schloffski—and dreaded going back. And they seemed to have given up. On the other hand, I reminded myself,

they'd had more experience with bureaucracies. Maybe they just knew enough to go home when the ball game was over.

I walked halfway around the hub and took an elevator inward to the Student Center. There was a big line near the office. I prowled around and found Zak at the end of it.

"What's up?"

"They're taking names of men who want to stay behind."

"That's for me." I got in line.

"Quite a few ahead of us."

"Guys have been waiting around all morning. I don't figure it matters when you sign up, though. They'll pick us by abilities."

"Seems reasonable."

"Okay for you, maybe. I'll probably wash out the first time the bridge officer reads the list."

"How come?"

"I ride herd on computers, and that's *all*. I can't pilot a shuttle, like you, and I don't know any electronics. I've spent all my time on math and learning how to tickle answers out of that overgrown abacus."

"Maybe you're right. If you've got a small staff you might as well fill it with triple-threat men if you can."

"My reasoning exactly. I'm going through the motions anyway. Earthside will be bad, but I'll be better off than some of you guys."

"Why?"

"Remember that advertising slogan? 'You never outgrow your need for computers.' I can always get work somewhere, partake of the leisure of the theory class."

"Umm. I guess there won't be much to do for a shuttle pilot, now that space research is getting the axe."

"Next!" It was Zak's turn. He gave the standard information and was waved away.

"John Bowles," I said. "Any idea how many have signed up?"

"Too many. What's your job?"

"Shuttle pilot. I know some electronics, too—"

"Who doesn't?"

"—and I put in some time in Monitoring."

"Your father is in charge of Monitoring, isn't he?"

"Yes, but—"

The officer made a note. Maybe he figured Dad had just carried me on the rolls for a while. "How are you going to choose the men?" I said.

"We'll start with the ones who don't ask questions. Next!"

I wandered around with Zak. There were people everywhere; it felt like a festival day, only people were clumped together in knots, talking. We fooled around for a while and I mentioned my idea about hiding the skeleton crew instead of forcing the *Argosy's* crew to leave them behind. Some of the other kids liked it; others said they

preferred a fight, even if the Can's hull got punctured by accident. They seemed to be looking for a showdown and any handy enemy would do.

The talk wasn't getting anywhere—good grief, the Argosy was seven months away—so I dropped out and ambled down to Mr. Jablons' lab.

And *he* wanted to talk politics. He'd thought of my idea too, and found a hole in it big enough to drive a truck through: what if somebody like Mrs. Schloffski blabbed? That stumped me. We couldn't very well gag her and the skeleton crew wouldn't tolerate leaving her behind. It looked like the only answer was a fight.

I swore off talking about politics; it made my head hurt.

"What I came down here for was some advice," I said, changing the subject. "I went out yesterday and found a crummy old Faraday cup on Satellite 14. Can't we rig up something better?"

"Ummm," Mr. Jablons said. "What about that design you and I roughed out last year?"

"Well—" I hesitated. "The ones we built worked okay here in the lab, but they haven't been tried in space."

"We gave them two thousand hours of baking, bursts of radiation, the works. They came through."

"Right. They'll sure be better

than the ancient one I saw."

"Which satellite?"

"Number 14."

"Oh, that's it. Number 17 has the same type, I've been nagging people to change those Faraday cups for years. Both 14 and 17 are in near-polar orbits. That makes them harder to reach by shuttle and thus far nobody's wanted to take the time just to replace a part that's working fine as it is."

"Well, I'll do it. Those old ones aren't sensitive enough for the job. Let's get the ones we designed out of storage."

It was a couple of hours before I got the new Faraday cups checked out and packaged for carrying on the shuttle. They are delicate instruments and can't be thrown around like freight.

I went up to the bridge to request a flight plan that intercepted 14 and 17 both; no use in making two trips. I could have requested the plan over intercom but I wanted to stick a nose into the nerve center of the Can and sniff around.

The bridge is about two thirds of the way out toward the rim, smack in the spot most thoroughly shielded from radiation by the mass of the rest of the Can. That's mostly to protect the magnetic memory elements in the computers, but it also cuts down lines of communication.

I got past one watch officer, but that was it. At the door to the

bridge itself I was stopped and my request taken. I could see into the darkened volume beyond, where viewscreens shifted and threw up lines of incoming data faster than an untrained eye could read them. Commander Aarons was talking to some civilians—I couldn't tell who—and gesturing at a big display of an Earth-Jupiter orbit, probably the *Argosy's*.

Then the officer cleared his throat, asked me if I had any more business, and suggested I move along. I shrugged and went to find Jenny.

It wasn't hard. She was standing in line to sign up for the skeleton crew.

"What's this?" I said.

"What does it look like?"

"Sheeg!" I said. "Every fish wants to be a whale."

"Any reason why a girl shouldn't be on the skeleton crew?"

"No, none really." Then I thought of something. "Do you imagine the Commander will pick *two* shuttle pilots, though?"

"Of course not. Oh . . . I see what you mean. They'll split us up."

"If they take a shuttle pilot at all. Which I doubt. The skeleton crew is strictly a holding operation, with a few flourishes."

Her turn came just then. The bridge officer raised an eyebrow but said nothing; the military has never been a booster of equality for women.

When she was through I said, "Ready to do some work?"

"On what?"

I explained about the Faraday cups.

"Sure," she said. "Anything to get out of this madhouse."

I told my father over intercom that I would be gone until after midnight, ship's time, and to tell Mom not to wait supper on me; I would take enough suit rations. Dad hadn't heard anything new other than scuttlebutt. The newest rumor was that Commander Aarons had lodged a formal protest with ISA, without expecting it to do any good.

Dad mentioned that Monitoring had picked up more showers of rock orbiting into the Jovian poles; they seemed to be a regular occurrence now. The astronomers were busy trying to explain where they came from.

I told Jenny about the rumor on the way to the lock.

"Is that all he can do, lodge a formal protest?" she said. "Fat lot of good that is."

"All he can do until the *Argosy* arrives is talk. There will be plenty of time for action then. The Commander has already sacrificed enough for the Lab as it is."

"What do you mean?"

"Look, all the bridge officers are military men. When Lt. Sharma made that speech he was advocating that the Commander violate his

orders—and Aarons accepted it. Even if he gets us Earthside and leaves a skeleton crew, he'll be cashiered. The bridge officers effectively ended their careers last night."

"Oh. I didn't realize that."

"We're civilians, we don't think in those terms. The Commander will never mention it and I sure won't, either. After we're Earthside we'll see a story in the fine print of a newsprintout somewhere, and that will be it."

Jenny was quiet after that; I don't think she had realised quite what was going on.

We took the *Roadhog* again, with me in the pilot's chair. The orbit was already in *Roadhog's* computer with a launch time about fifteen minutes later than we needed; I had asked the bridge for a margin, just in case I couldn't find Jenny right away.

Jupiter was a thinner crescent than before and we were on the other side of our orbit around her, heading out from the sun now. The flight time was again six hours and we spent most of it talking. It's amazing what you can learn about another person in that much time. Jenny told me things she said nobody had ever heard from her before; I let a few of my dark secrets out, too. I think it did us both good.

We had rendezvous with Satellite 17 six hours out; it looked even more decrepit than 14. There were

patches where the polished metal skin had dulled and turned gold, for some reason. I snapped a few photographs for Mr. Jablons.

It took a terrifically long time to install the new Faraday cups. Jenny left the *Roadhog* to help because it was impossible for me to hold everything in place and make high-vacuum welds at the same time. I couldn't use magnetic clamps to hold all the parts in place, either, since the fields might disturb some of the instruments inside the satellite.

The bridge and Monitoring both confirmed proper functioning of the new Faraday cup; I thought I recognized Dad's voice.

*Roadhog's* ion engine boosted us over to intercept Satellite 14, firing at maximum thrust all the way to make up time I had lost fiddling with 17. I spotted it and tried to shave a little time off by doing the approach on manual. My distance perception must be a little faulty; I overshot and had to backtrack with maneuvering jets.

Jenny handled a lot of the dog work on the installation this time. My reflexes were fouled up a little from simple muscle fatigue, but we got everything working well inside the bridge's allotted time. The window for our return orbit opened just as we were battening down: I gunned her hard enough to see a thin violet trail behind us, and we were on our way home.

Somebody once said that space flight is hours of boredom punctuated by seconds of terror. Well, there isn't much terror in shuttle work but there is plenty of boredom. Jenny and I slept most of the way back. The bridge woke me up once to report a steady rise in storm activity on Jupiter. I acknowledged and thought I spotted more of the whirlpools before I fell asleep again, but at the time I didn't much care if there was a three ring circus on Jupiter, complete with clowns; I was tired.

When I tucked *Roadhog* into her berth I topped off her fuel tanks and started running through a series of maintenance checks to be sure the instruments were still okay.

"Hey, don't you want to get inside?" Jenny said. She had just awakened and was grumpy.

"Sure," I said over suit radio. "But I want to be sure *Roadhog* is ready to go out right away if I need her."

"Ummm," She stretched. "We've been out in her—what?—fourteen hours. Some time to suddenly become a stickler."

"Tourist!"

"Ummmm."

"A working cowboy waters his horse before he gets anything to drink himself."

"She's a horse now, is she? I thought she was a roadhog."

"Come on." I grinned at her

through my face plate. "I'll race you to the airlock. *And*—special, today only, folks—I'll buy you that drink."

"Lead the way, my swain."

I WOKE UP late the next morning with a funny buzz in my head and eyes that didn't want to focus. Getting out of bed almost convinced me that the spin had been taken off the Can and my bedroom was now at zero gee—nothing moved quite right.

I recognized the symptoms. I had felt the same way when Dad introduced me to the black currant wine Mom brought down from Hydroponics; with no resistance or experience, it doesn't take very much to addle your brains.

Jenny and I hadn't really drunk a lot, but I guess it makes a difference *what* you drink, too. I'd experimented with hard liquor while she sipped an aperitif wine. The evening had gone rather well: we sat in a corner of the darkened bar, meriting a few puzzled glances from the watch officers who came in after leaving duty. There was no one else around at those early morning hours, so our baptism into the rites of elders went unobserved by our friends, just the way we wanted it.

There was no great romantic climax, no avowals of eternal fidelity and True Love . . . but we had a good time. I said my usual awk-



ward things, walked her home and kissed her good night. Now I had a hangover. How could life be more complete?

After a solid breakfast to get my blood sugar count up again I felt pretty good. I resolved to learn something about liquor before I tried some of the more exotic brands of rocket fuel the bar offered.

I got down to the Student Center during what would have been the normal morning coffee break, if these had been normal times. Kids were milling around the corridors trading rumors, with a particularly big clump at the bulletin board. I shouldered my way up near the front and saw a single typed notice:

PLEASE NOTE THAT IF, REPEAT, IF  
A SKELETON CREW IS LEFT BEHIND  
AT THE LABORATORY, ONLY SINGLE  
MEN OF MATURE YEARS WILL BE  
CONSIDERED

COMMANDER AARONS

"Pooh!" a girl next to me said. "That boils it down to ship's officers."

"And some technicians," a boy said.

"And me," I put in.

"Didn't you read it all?" the girl said. "That 'of mature years' translates as 'no kids'."

"Eighteen should be old enough," I said.

"Uh uh," the boy said. "that just

means you're legally entitled to vote and carry a gun."

"What's a better definition of maturity?" I said sharply.

The boy shrugged. "Fight it out with Aarons if you want. I'm just giving you an educated guess."

"I need more than a guess," I turned and worked my way out of the mob again. There weren't many kids in the Can in all, but they all seemed to be hanging around the Center. I wondered if any work was getting done at all and then realized that it probably didn't matter to most of them; they had already mentally adjusted to the idea of shipping Earthside.

"Hey! Where you going?"

"Oh, hi Zak." I stopped at the edge of the crowd. "I'm going to the bridge."

"Don't. I've already tried that gambit. Fifty other people thought of it first; the place is packed. They're not giving out any information, either."

"They've got to explain that notice."

"They haven't 'got' to do anything. The Commander probably wanted to stop people from pestering him with questions, so he eliminated most of them by ruling out women and married men. That's most of the Lab right there."

"What about us?"

"Who knows? Maybe they'll let eighteen-year-olds stay, or maybe the Commander will stick with men

who've been on the job a long time. I wouldn't be surprised if he kept it down to only officers."

"Why would he do that?"

"Figure it out. What have they got to lose? Earthside they'll be stripped of their commissions for disobeying orders. Why should they go back at all?"

"Well, I hope they don't fill all the slots."

"You really want to stay, don't you?" Zak said, looking at me oddly.

"Sure. Don't you?"

"Yes, but I'm not a fanatic about it. It's going to be pretty chancy staying in the Can without the *Argosy* and *Rambler* as backups."

"Think of all the material you would get for your diary. It would be an automatic bestseller."

"Huh! Boswell—the one who wrote *Life of Samuel Johnson*—used to feel that he hadn't really lived a day until he had written it up in his diary. I'm not *that* compulsive. There are better reasons to do things than just so you can put them in your diary."

"No more exciting chronicles of life among the supermen?"

"Not unless they pick me for the skeleton crew, anyway. Besides, there are some doubts buried deep in my poetic soul about the whole business."

"Huh?" I glanced at a wall clock.

"Say, I want to get over to Monitoring to see my father. Come

along for the walk, you probably need the exercise—"

"Health nut!"

"—and you can explain that last statement."

We went inward a few levels by elevator and started walking through a tangle of laboratories to reach Monitoring.

"Look," Zak said, spreading his hands, "call me a groundhog if you must, but it seems to me there's an ethical problem here. ISA is calling us back because Earth needs the money for social problems. Things are tough back there. People are eating seayeast patties and living in each others' hip pockets."

"So are we."

"Voluntarily. Those people in India didn't raise their hands, they were born into it. What right do we or ISA or anybody have to take away money that might help them out?"

I walked along in silence for a moment. "I don't know. Maybe we haven't got a moral leg to stand on. But something tells me there's more to it. The same logic would have kept Columbus at home until all of Europe's slums were emptied."

"Right."

"How long would that be?"

"Huh? To clear the slums? Oh, I see. They're still there."

"And always will be. We keep upgrading the definition of 'slum.' Even so, I still don't think your

argument stays afloat." I ambled along, hands stuck in my pockets, thinking. "I can't help but feel something basic will be lost if we give up ideas like the Jupiter Project. They're *dreams*—the things men live by."

"There will be other times in the future when we can come back out here."

"Yeah? When? A thousand years? There have been eras in Earth's history when men sat on their hands for that long, too poor or weak or scared to try something new. It could happen again, easy."

"Maybe so and maybe not. You don't know that would happen."

"There's the trick: you *never* know. Life is riding by the seat of your pants. We think new knowledge will pay off, sometime, but we don't *know*. All we know is that it always has before. Why should knowing about Jupiter be profitable? No answer. We don't know until we come. Is terraforming Ganymede a good idea? We won't know the answer to that one for a century or so, if then. Except, if we *don't* do it where are we ever going to set up a self-supporting colony? The sociologists say small isolated communities are the best longterm places for people; they keep people happy and productive. Ganymede might be a test of that in the long run—Earth hasn't fit that description in centuries.

"That's the whole trouble; the

whole history of the human race has been one long unrepeatable experiment. Nobody's ever going to figure us out. So we might as well try everything we can, even if it hurts a little, to see what doors it opens up."

"Lecture over?"

"Yeah. Sorry."

"That's okay. I have a funny feeling you're right. It *feels* right, anyway. Something has got to be wrong with a system that says Michelangelo shouldn't have taken money to do the Sistine Chapel as long as everybody wasn't eating prime beef."

I nodded. The walls of the corridor were painted in a red spiral to give the feeling of depth but at the moment the effect just made me a little dizzy. We came to Monitoring and Zak waved goodbye. I went in.

Dad looked up from his notes. Mr. Jablons was with him.

"Come on in, son. You're just in time to see if your Faraday cup design holds up."

## Chapter 10

THERE WAS A THIRD MAN I vaguely recognized, wearing African robes.

"John, this is Dr. Kadin. He is the Laboratory Science Director." Dr. Kadin bowed slightly and smiled. I remembered that he was Dad's boss; in fact, the head of all the scientific research done in the

Can and on Ganymede. I made the appropriate introductory noises while I tried to figure out why he was here.

"There are large storms brewing at Jupiter's poles," Dr. Kadin said to me. "Over the last few weeks I have been working with the astrophysicists to find an explanation. We have had little success. We do, however, think the storms may be throwing great swarms of electrons and other particles completely out of the Jovian atmosphere. Once above the ammonia cloud layer they may become caught in Jupiter's magnetic fields and funneled into the Vanallen belts. It is, of course, only an hypothesis." He smiled again, showing incredibly white teeth.

"It's a good thing you installed those new cups," Mr. Jablons put in. "They'll give us much better resolution of the electron concentration around Satellites 17 and 14."

"Because 17 and 14 pass close over the poles?" I said.

"Correct," Dr. Kadin said precisely. "If your design can function under high particle flux we may be able to record some highly significant data. There are some theoretical reasons to believe these particles originated deep in the Jovian atmosphere, perhaps deeper than we have ever been able to probe before."

"When does it happen?" I said.

Dad glanced at a clock. "About now, I've been trying to reach you at home and down at the Student Center, with no luck. Thought you might want to watch. Satellite 17 should enter the polar region any moment."

Dad thumbed the panel on his desk and his viewscreen began registering a readout from the Hole. The watch officer had set up a simple moving graph to show the particle flux that Satellite 17 was registering. The black line had already started a gradual climb. We all crowded around the screen, just about filling Dad's office.

"That is an expected result," Dr. Kadin said after a moment. He poked a finger at the rising line. "We can correlate this data with information from other equatorial satellites, to find the energy and other characteristics of the particles. The important point is how high this line can go."

Mr. Jablons shuffled nervously. We waited, watching the line climb faster and faster. The only sound was a background whirr of air circulation.

The line rose, rose—and then dropped. It fell straight down to zero.

Dr. Kadin frowned. "It should not do that."

We waited. My face began to feel hot. The line didn't move.

"The Faraday cup may have shorted out," Mr. Jablons said

finally.

"Yes. It would seem so." Dr. Kadin glanced at me, then looked quickly away. "Unfortunate."

My father cleared his throat. "If the instrument has failed there is nothing to be done."

"But it *couldn't* fail!" I said.

"Quiet, son. Remember, Dr. Kadin, Satellite 14 crosses the same region above the pole in—" a look at the display screen—"three hours. We can get some data then."

"Yes. Good." He looked at me, not smiling. "The old Faraday cup would have given at least some information throughout the satellite's passage over the pole. Hummm. Well—I shall return in three hours."

With that he swept from the office.

DAD AND MR. JABLONS tried to cheer me up, but I wasn't having any. We all knew that design worked. I must have installed it wrong. Maybe the job on 14, with Jenny helping, was okay. Maybe.

One thing was clear: the radiation level in the Vanallen belts was rising fast. Dad made a note to advise the bridge and recommend that no men or craft be allowed outside the Can for the duration of the storm. I fooled around in the Hole, keeping tabs on Satellite 14 while it orbited up from the equator toward Jupiter's north pole.

After a while I took a break and

wandered down to the Center. I was feeling pretty rotten. I ran into Jenny and she reminded me about a dance that evening. That cheered me up; it would take my mind off everything that was going wrong with my life. Normally I dance as if someone was firing pistols at my feet, but with Jenny. . .

That's when I got an idea. I looked around for an intercom phone and asked Jenny to wait a minute.

"Bridge," a flat voice answered.

"This is Bowles. I'd like a provisional trajectory computed for rendezvous of shuttle *Roadhog* with Satellite 14, departure in, ummm, two hours fifty minutes from now."

"Well, okay, but we're expecting to close down external operations any minute now. Background count is too high."

"Transmit it to *Roadhog's* computer anyway, will you? I can clear the computer tomorrow if the program is invalidated."

"Okay, if you just want to make work for yourself. I'll beam it over in a couple minutes."

"Right, thanks."

I hung up and went back to Jenny.

"What's up?"

"Oh, nothing," I said. "Had lunch yet?"

"I was hoping you would ask that question. Let's go."

DR. KADIN ARRIVED a few minutes after I got back to Monitoring. I studied the reports from equatorial satellites; the radiation being fed into the Vanallen belts had dropped in the last hour, almost down to the permissible level for shuttle craft operation.

"Do you suppose the storm is dying out?" I asked Dad.

He peered at his viewscreen, which at the moment was focused on a gigantic orange whirlpool in the ammonia clouds. "There isn't any way to tell. The storm activity seems to be related to the number of vortex formations in the atmosphere, and there aren't any new ones building up right now."

"There may be a relatively quiet time coming up," Dr. Kadin put in, "much like the eye in a hurricane. I must say this is all very queer and extraordinary. There has been nothing like it in the nine years we've been here. I hope Satellite 14 will give us the data we need."

"Where is 14?" Mr. Jablons said.

Dad switched to another input and reported, "Two minutes until anything significant could register."

Dr. Kadin got a distant look in his eye. "You know," he said, "so many curious things are happening at once, it is enough to make one wonder. We have recorded massive thunderstorm activity deep in the atmosphere. Great bolts of lightning."

"The formation of living cells requires lightning, doesn't it?" I asked. "Electricity can energize the manufacture of heavy organic molecules—like the ones we know are down there in the methane clouds—to produce living compounds."

"So experiments on Earth have shown," Dr. Kadin said, raising his eyebrows and sighing. "But we have never found such things in Jupiter. Perhaps lightning is not all that is needed."

"What about those meteor swarms?" Mr. Jablons put in. "What's the explanation for them?"

"I am afraid today is not a bright one for the scientists. Our expert on the asteroid belt says they may come from there. Another says the orbits trace back to Jupiter's own moon system. There remain many questions; we do not have sufficient data. The odd thing is that the swarms strike Jupiter near the poles, not the equator. Very unusual—"

"The Faraday cup on Satellite 14 is beginning to register an increase," Dad said. We all crowded around his desk. Dr. Kadin fidgeted at his robes; Mr. Jablons tapped a pencil on his knee.

The black line rose again. I clenched my fists, watching it, not daring to move. The only sound was the pinging of a recorder.

"Looks good," Mr. Jablons said

hopefully.

Dr. Kadin said nothing.

The line shot up, climbing to nearly the same level 17 had registered. It held there, steady, steady, holding—

And fell.

In a moment the readings dropped to zero. The Faraday cup wasn't working.

"Well," Dr. Kadin said. "I had hoped—"

I couldn't listen to it. I turned and bolted from the room.

"John!" my father called after me. I didn't look back.

I ran down the corridor, blinking back tears of anger. That cup *couldn't* fail. I just knew it!

I took an express elevator inward, toward the center of the Can. The tube that led to the air lock was deserted; nobody was going outside now, during the storm.

I forced myself to calm down a little once I was in the suiting-up bay. It wouldn't be smart to foul up an air hose and find out about it in the middle of decompression.

I left the bay, carrying my helmet under my arm, and stepped into the short passageway that led to the main air lock. It would be a good idea to cycle the lock manually; the bridge might notice it on their board if I put the lock on automatic. I put a hand on the hatch wheel.

"Hey, shrimp, what're you doing?"

I didn't say anything, I just turned the wheel faster. I heard Yuri's steps behind me.

A hand landed on my shoulder and spun me around.

"There's a storm, kid. Nobody goes outside."

"I've got permission."

"Oh? From who?"

"The Commander. Ask him."

I pointed down the corridor.

Yuri turned his head, following my finger. I knew I would only get one chance.

I slammed my fist into his stomach and followed it with a jab at his chin. "Hey!" He staggered back. I aimed and clipped him on the point of his chin with everything I had.

Yuri went down and didn't move. I didn't think he was hurt—he had fallen in near-zero gee—and at the moment I didn't care much one way or the other.

I left him there. Sure, I could tie him up, but what if somebody else came along?

I cycled out of the lock, breaking the hatch open before the red light winked green. A burst of air blew me away from the lock, tumbling.

I leveled off using attitude jets and picked out the *Roadhog's* berth. I cruised over to it. I felt lightheaded; I automatically checked my oxygen level to see if I was hyper-ventilating. The meter didn't say so: the effect was probably from adrenaline.

I coasted into the seat after clearing the mooring lines and backed *Roadhog* out of the berth in one burst. I set a beeline course for the mouth of the Can and thumbed on the autopilot. Good; the course for Satellite 14 was logged in. Departure time in five minutes. Well, that would have to be close enough; I couldn't hang around waiting, and *Roadhog* would clear the Can in less than two.

I ran a quick check on the shuttle. One of the forward lines had vapor locked, but I overloaded the pressure and blew it open. It would probably be okay for the trip. (Or at least that's what I told myself.)

We passed pretty close to the *Sagan* going out. It was eerie, being alone in the bay. There were no work lamps, no other moving craft.

We had just cleared the lip of the Can when I switched in the computer orbit. *Roadhog* stirred under me. She pointed her nose at the glowing crescent of Jupiter and I felt the ion engine kick in. We were off!

*Roadhog* ran steadily for a few minutes before the radio came alive.

"Bowles! This is the bridge. We have just picked you up on radar. Turn around. Radiation levels—"

I switched it off. After I had given the *Roadhog* a thorough check I switched it back on again.

"—mander Arons speaking. I

order you to return to the Laboratory. You can accomplish nothing this way."

"I don't think he's listening, sir. We haven't had a peep out of him."

"Hummm. Can someone go out and get him?"

"Not to easily. Those shuttles have big engines on them, for their weight. He's already moving pretty fast."

"How long to pick him up?"

"Two hours, minimum."

"Not good enough. I can't ask someone to risk his life—"

"Don't bother," I said. "I'll take all the risks."

There was a pause. Then: "Bowles, this is a very foolish thing to do. There is no need—"

"Listen, I'd like to talk to my father."

Faintly: "Where's his father? On intercom? Patch him in."

"Hello, John?"

"Hi, Dad."

"This isn't very smart."

"I've got to do something. I don't want to go Earthside, Dad. You said yourself that we've got to justify keeping the Lab out here by solid results. Well, maybe it's too late, but I'm going to try."

"Son. . ."

"What is the radiation level along my orbit?"

A pause. "Well, you are a little lucky there. The background count seems to be falling off. Maybe there is going to be a lull in the storm,



but you are taking a chance."

"Anybody who keeps breathing takes a chance."

"John, your mother would like—"

"No, no." I didn't think I could take that. "Don't put her on."

In the background: "If the pattern holds, sir, the radiation levels will be acceptable."

"Hummm. Cancel that order to intercept." "I think he has a good chance to come out of it all right sir." "But you don't know, do you?" "Uh, nossir."

"Dad?"

"Yes, John. Your mother—"

"No. I'm signing off. I'll let you know if anything changes. I'm not eager to get a radiation burn out here, either. But I think this is worth the chance."

"I think Yuri will be around to look you up when you get back, too." I could imagine him smiling as he said it.

"Tell him I'll be receiving visitors. And don't worry. I'll be okay."

"I hope so."

"Goodbye." I switched off.

"LONELINESS" is a sad word; "solitude" is more dignified. But loneliness is just solitude you don't want, and there were times in the hours ahead when I would have given anything if Jenny or Zak or anybody had been there.

For a while I watched the radia-

tion gauge every two minutes. It dropped a little but not much. My radio emergency light blinked a few times; I ignored it.

The journey became almost hypnotic. Jupiter was a thin crescent sliced by the familiar bands. I could make out some of the outer moons; Ganymede was a faintly ruddy little disc. Io trailed behind me, an orange-red ball that fell below as I moved toward Jupiter's north pole. Satellite 14 was coming down to meet me.

I watched the huge whirlpools catch up and pass below me. At their centers I could see dark blotches—methane? frozen water?—swirling in a grand, lazy dance. It was hard to believe those blemishes were larger than the Pacific Ocean.

Jupiter filled the sky. This close it is more like an infinite plain than a planet and you can't really be convinced that you aren't going to fall into it. Beyond the terminator, in what should have been blackness, I could see thin fingers of yellow lightning playing in cloud banks.

Perhaps Jupiter was the home of the gods and the storms were merely giant tournaments; Jove throwing his triton.

I caught myself right there. Men have been hypnotised by Jupiter's vastness before and I recognized the symptoms. I gave myself some rations, savored them to stretch out the time, and busied myself by

climbing around the *Roadhog* and looking her over. The superconductor fields were working okay; because of them I couldn't climb over the side and inspect the undercarriage. I called the Can a few times. After a few tries at persuading me to come back the bridge officer gave me radiation level readings; they matched pretty closely to mine.

I didn't think very much about the radiation, I was getting a little more than the "acceptable" dose, but that was just an average worked out for people in all sorts of jobs. If I got a lot there were treatments that would help.

Even if I didn't make it—so what? Nobody lived forever. I wouldn't live to see the first star ship leave; I'd never know if there were intelligent life forms living near the Centauri system, or Tau Ceti, or...

I caught myself again. No use getting morbid.

Minutes crawled by, then hours. I dozed.

My radio emergency light was blinking an angry red when I woke up. I ignored it and checked the time. Rendezvous should be coming up.

I looked around to orient myself, Jupiter was still a banded custard below, but now I could see a darkening toward the pole. In a few minutes I had picked out a dot that seemed a likely candidate. It grew.

I matched velocity and watched Satellite 14 resolve itself into an overweight basketball.

I coasted over. The Faraday cup didn't show any damage; everything looked just the way I had left it.

I disconnected it from the satellite's electrical system and checked carefully over the outside. Nothing wrong. The heart of a Faraday cup is the grid trapping mechanism; I would have to open it up to get a look at that.

I unclipped a no-torque screwdriver from my suit belt and took the cover off the cup. Everything still looked okay. I removed the backup shields and slid the center of the cup out; it was just big enough to hold in one hand.

The final cover came off easily and then I saw what was wrong. The space between anode and cathode was filled with some sort of oil.

I thought back. Oil? That didn't make sense. I was sure it wasn't there when I installed the cup, it wasn't oil, anyway. It was more like sticky dust. I poked a finger into the space. Some of the stuff stayed on my glove; some more drifted away into space.

I swore. An electrical failure I could understand, but this was out of my department.

What about that old Faraday cup I'd replaced? I hadn't even looked at it; I'd just let it drift

away from the satellite, since I didn't have any further use for it. Maybe that one had this gunk in it, too.

One thing was certain: I wasn't going to fix it out here, I took out a plastic sheet and wrapped up the part, dust and all.

I got back in the *Roadhog*, waved goodbye to 14 and started the ion engine.

The work had made me hungry again. I ate some rations and then finally answered my radio.

"John?" It was Mr. Jablons.

"Who else?"

"I though you might like to know that Satellite 17's cup cleared up a while ago. There appears to be some saturation phenomenon operating."

"Oh, great. You mean if I'd left the cup on 14 alone it would fix itself?"

"Probably. Are you bringing it in?"

"Yes."

"We'll need a look at it anyway. A device that fails only when you need it isn't much use. I'll meet you at the lock and get right on the problem."

"Fine."

After some chatter about the radiation, which was rising again, I switched off. The bridge estimated that if the storm followed the same pattern as it had earlier, I wouldn't get too much of a dosage. It was a race to get me back to the

Can as soon as possible. I was in the fastest possible orbit right now, so there wasn't much to be done.

I wasn't in the mood to wait out the flight. I took some pills and went to sleep.

THE CORRIDOR outside the Can's main lock looked like a subway car. People were jammed in. Everybody stared at me as I came through the hatch. I took off my helmet and noise poured in.

"John!" My mother wrapped her arms around me and cried. Dad was there, smiling and frowning at the same time, shaking hands with me. People were swarming around, touching me, helping me off with my suit.

Mr. Jablons appeared at my elbow. "Welcome back." He took the Faraday cup in its wrapper. "Good luck with the boss, too." His eyes twinkled and he gestured with his head at Commander Aarons, who was talking to an officer down the corridor.

"How do you feel, John?" I turned the other way; there was Jenny.

"Great."

"I hope you—"

"Forget it. I'm immortal," I said gruffly. I didn't mention that for some reason my knees felt weak. Now that it was all over I wondered why I did it.

Commander Aarons looked over

at me. "No," I heard him say, "I will talk to him later. Let the doctors look at him first."

A hand took my elbow and guided me through the crowd. I winked at Jenny, hoping I looked self-confident.

There were two medical attendants with me. They hustled me into an elevator and we zipped inward five levels. A doctor in a white coat poked at me, took a blood sample, urinalysis, skin sections—and then ordered me into a 'fresher.

I got a new set of standard ship work clothes when I came out, and a light supper. My time sense was all fouled up; it was early morning, ship's time, but my stomach thought it was lunch.

After that they left me alone.

Finally someone stuck his head in a door and motioned me into the next room. The doctor was in there, reading a chart.

"Young man," he said slowly, "you have given me and your parents and a lot of other people a great deal of trouble. That was an extremely foolish gesture to make. These past few days have been hard on all of us, but such heroics are not to be excused."

He looked at me sternly. "I imagine the Commander will have more to say to you. I hope he disciplines you well. By freak chance, you seem to have avoided getting a serious dosage of radi-

ation. Your blood count is nearly normal; I expect it will reach equilibrium again within a few hours."

"I'm okay?"

"That is what I said. Your—"

There was a knock at the door. It opened and a bridge officer looked in. "Finished, Doctor?"

"Nearly." He turned to me. "I want you to know that you came very close to killing yourself, young man. The background level out there is rising rapidly; a delay of half an hour could have boiled you alive. Commander Aarons will make an example of you—"

"No doubt." I got up. The Doctor pressed his lips together, then nodded to the officer reluctantly and I left.

"What now?" I said in the tube outside. "The Commander's office?"

"Nope. Mr. Jablons'."

"Why?"

"They don't let me in on their secrets. The Commander is there now. He sent me for you. If it was up to me I'd have you thrashed, kid."

I didn't say anything more until we reached the electronics lab. The Commander himself opened the door and waved the bridge officer away. He didn't look angry. In fact, he hardly saw me as I came in and closed the door; he was gazing off into space, thinking.

Dad and Mr. Jablons were

sitting at one of the work benches. Dr. Kadin was working at the high-vacuum tank in the middle of the room. His hands were inserted in the waldos and he was moving something inside the tank.

Dad looked up when I came in. "Ah, there you are, Mr. Lucky." "Huh?"

"Look in the tank."

I walked over and looked through the glass. The Faraday cup was inside. Some of the sticky dust had been taken out with the waldo arms and scattered over a series of pyrex plates. The plates were spotted with green and blue chemicals and one of the plates was fixed under a viewing microscope.

"That contaminant you found inside the cup wasn't dust, Paul," my father said. "It is a colony of spores. They are still active, as far as we can tell."

Dr. Kadin turned and looked at me. "Quite so. It would seem, young Mr. Bowles, that you have discovered life on Jupiter."

## Chapter 11

**S**UDDENLY EVERYBODY in the room was smiling. Mr. Jablons laughed. "When they write this up in the history books, they'll have to record that blank look of yours, John."

I realized that my jaw was hanging open and quickly shut it. "What—How?"

"How did it get there?" Dr. Kadin said. "That is a puzzle. I imagine these spores—if that is indeed what they are—somehow traveled up through the Jovian atmosphere by riding along—'piggyback' I believe you say—on the electric fields produced by the turbulent storms."

Mr. Jablons slapped his knee. "I knew it would happen. Half an hour ago we didn't know if that dust was alive and already a theory has raised its head."

Dr. Kadin ignored him. "You might have a look at them through the microscope," he said. "There are very interesting aspects."

I bent my head over the eyepiece of the microscope. Against a yellow smear I could see three brownish lumps. They looked like barbells with a maze of curved lines running in all directions inside them. They weren't moving; the smear had killed them.

"Note the elongated structure," Dr. Kadin said at my ear. "Most unusual for such a small cell. Of course, these do not appear to be at all similar to Earthly cells in other particulars, so perhaps such a difference is not surprising."

"I don't get you," Dad said.

"I believe these organisms may use that shape to cause a separation of electrical charge in their bodies. Somehow, deep in the atmosphere, they shed charge. Then, when a storm blows them to the top of the

cloud layer, they become attached to the complicated electric field lines near the north pole."

"That's what brought them out to Satellite 14?" I asked.

"I think so. It is the only mechanism that would work."

"Why did the Faraday cup malfunction?" Commander Aarons asked. It was the first thing he had said since I arrived.

"Well, consider. When an electron strikes the cup it passes through the positive grid and strikes the negative plate. From there it passes down a wire and charges a capacitor. These spores—or whatever—are also charged; they will be trapped in the same manner. But they do not pass down the wire; only their electrical charge does. So they remained in the space between grid and plate, eventually filling it up. They still retained some of their charge, though, and when they piled up high enough to connect the grid and the plate they shorted out the circuit." Dr. Kadin looked around, as if for approval.

"That could be why the Faraday cup failed, all right," Mr. Jablons said.

"I couldn't tell much from the microscope," I said. "Dr. Kadin, what are those cells like?"

"They *seem* to be carbon-based. They are not carbon dioxide absorbers, however, like terrestrial plants; perhaps they breathe

methane. They have a thick cell wall and some structures I could not identify. Calling them spores is only a guess, really."

Commander Aarons shook his head. "You are certain these things couldn't have been left there by accident—just be something from the Can that was on the Bowles boy's gloves when he took it out?"

"No. They are like nothing I have ever seen."

"But what are they doing out there?" Dad said. "Why should organisms evolve that can be thrown clear above the atmosphere? If that bunch hadn't been trapped in Satellite 14 they could have gone all the way to the south pole, riding the current patterns that link with Io."

"That may possibly be the point," Dr. Kadin said. "Perhaps these are spores and they were migrating."

"Migrating?" Dad said. "What for?"

"We know there are fewer storms near the poles. A point at the pole does not rotate like the rest of the planet; the atmosphere above it is relatively still. It could be that only under those conditions can life survive in the Jovian atmosphere."

"I see," I murmured. "They were migrating to the other liveable zone of the planet—the south pole."

"Perhaps, perhaps." Dr. Kadin

waved his hands. "This is all quite preliminary. I am only advancing speculations, you understand."

"We can deal with theories later," Commander Aarons said. He smacked his fist into his palm. "The point is that we've found life—the real McCoy! If this doesn't make ISA sit up and take notice, nothing will."

"You think we might get to stay?" I said excitedly.

"We're back in the running, anyway. I am going to get Earth-side on the line at once; this will make headlines on every continent, if I am any judge." He plucked at his moustache, smiling to himself. "Just wait until—"

"If you don't mind, gentlemen, before you leave I have a piece of data you might find interesting." Dad said. He got slowly to his feet, pausing for dramatic effect. I grinned. Dad could really play to the house, when he wanted to.

"I couldn't sleep while John was out making an unintentional hero of himself; neither could his mother." I suddenly noticed bags under his eyes; he was tired. "I spent the time following up a project I've been meaning to get to for several weeks."

He picked a memory cube off the work table and inserted it in a viewscreen slot on the wall. The screen came to life.

At first I thought it was a bull's-eye—just a bunch of concentric

circles with three large ellipses outside. Then I picked out one little dot on the rim of each curve and realized this was the orbit pattern of the Jovian moons; the circle at the center was Jupiter. As I watched the dots moved. It was a speeded-up simulation.

"I had the computer plot out this history of the moons over the past month. All twelve of the larger ones are here. You will notice that the outer moons do not move rapidly and have rather eccentric orbits. The outer three have never been visited by man; they appear to be smaller than the other moons and are probably asteroids captured when Jupiter was young."

"That is only an hypothesis," Dr. Kadin said precisely.

"True, but a reasonable one." Dad paused again. "You have probably heard of the meteor swarms we have recently observed. They strike Jupiter near both the north and south poles. To do that requires an orbit that doesn't evolve in the same plane as Jupiter's equator, as the Can's does. It happens that the outer moons share this property."

"Ah," said Dr. Kadin.

"My reasoning wasn't this clear when I began. At the time I was simply interested in the orbits of the meteor swarms. Previously we had simply followed their orbits backwards until they came within the inner moons. I extended the

calculation."

My father pressed a button and the screen flickered for a moment. The moon orbits were in yellow; now blue lines crawled away from Jupiter's circle and spiraled outward.

"This is a history of the meteor orbits, run backwards. This first swarm spreads out a little"—the blue lines fanned open—"and then bunches together again. That is unusual in itself. But notice where they bunch."

The lines focused together and intersected the eleventh Jovian moon.

"There isn't very much error in this work; we got good fixes on the swarm."

"Are you certain they had to strike J-11?" Dr. Kadin said. "It is a very small satellite."

"About twenty miles across, in fact. But the swarm had to hit it; I'm sure of that."

"Dad, 'hit' is the wrong word, isn't it? This display is running backwards. You mean the swarm started from J-11, don't you?"

"Right. Sloppy terminology. The program is still going though—watch this next swarm. The same pattern—spiraling out, bunching."

We watched the lines inch away from Jupiter. They came together just as they met the yellow dot that was J-12.

"Zap!" Mr. Jablons said. "I don't understand what's going on,

but it looks beautiful."

"And strange," the Commander murmured.

"There's more," Dad said. "I'll speed it up."

Another family of lines did their dance, meeting at J-11. The next group was a little slower; they took their time, but they all ended up at J-12.

"Three earlier swarms show the same pattern."

"You have verified these calculations?" Dr. Kadin said.

"Yes."

"I am no astrophysicist," Commander Aarons said. "Maybe I am missing something in all this."

Dad shook his head. "I don't think you are, sir. This is something new to all of us. There isn't any handy explanation."

The room was quiet. Everyone was watching the screen. Blue lines crept out from Jupiter again.

"What could possibly cause it?" I said.

Dr. Kadin narrowed his eyes as he studied the lines.

"Let us go and find out," he said.

## Chapter 12

IT TOOK A DAY to ready the *Sagan* for an extra-long flight. I spent most of the time working with Mr. Jablons on the Faraday cups. We found the reason the cup



on Satellite 17 had cleared up after it left the region near the poles—the “spores” had their charge bled away after a few hours of contact with the grid and plate. When their charge vanished they were no longer attracted to the grid, so they gradually drifted out and away into space.

The biologists had a field day with the cells from Jupiter. This was what they had been waiting for; the mood of depression that had swept the Lab after ISA’s announcement evaporated overnight.

Everybody wanted details. Dr. Kadin held a seminar that packed the auditorium. Earth kept the laser communication network saturated with questions. I even found myself holding forth in the Rec room to a respectably-sized audience, telling about how I found the cup on #14 clogged. Yuri hung around the edge of the crowd, looking sullen. Somebody asked why the cup I had replaced hadn’t shorted out, too, and I had to admit that I didn’t know. Maybe the grid on the older cup had discharged the spores before they reached the plate, so they drifted out of the trap. Or maybe the storms hadn’t thrown out any spores until two days ago. We weren’t sure. As the scientists say, that aspect of the problem will be left for future research.

I WAS THE ONLY KID who shipped out on the *Sagan*. Maybe some of it was a reward for finding the spores, but I doubt it. They were taking *Roadhog* along, moored to the hull, and somebody had to pilot it when we got to J-11.

“Why not *Ballerina*?” Jenny asked me. She was part of the goodbye party at the main lock.

“I guess they didn’t want to take a girl,” I said.

“Mrs. Moto is going!”

“Okay, maybe you just got the short straw.”

She made a snort that promised worlds of trouble for Commander Aarons when the *Sagan* returned. I looked around. My mother had already said goodbye and was smiling at me from the edge of the crowd. The *Sagan*’s crew was cycling through the lock. Zak thumped me on the back, grinning.

“Hold the fort,” I said. I grabbed Jenny and gave her a long kiss that unfocused her eyes, shook hands with Zak and lugged my gear out to the *Sagan*.

It took three days to reach J-11. We maneuvered into a parallel orbit thirty miles away from it and the scientists got busy analyzing it optically.

J-11 was an unappetizing lump of rock, a flying mountain. Jagged peaks caught the sunlight and kept the low spots in shadow. The whole thing wasn’t twenty miles across at its longest dimension. There were

no ammonia drifts, just granite-like rock; that suggested it was a captured asteroid. J-11 had a few small craters, but not many; its gravitational field was too weak to attract meteor strikes.

I suited up and went out onto the hull to check out *Roadhog*. Commander Aarons came out to look things over and then waved on the exploration party of eight that I would ferry over. That was where *Roadhog* was essential. We couldn't risk taking the *Sagan* in close to J-11; any small error in jockeying around could smash the ship into a peak. In the *Roadhog* a small party could slip down into the fissures and get a good look if they needed to.

Lt. Sharma was in charge; his orders were to nose around and report back. The civilian head of the group was my father; one of his jobs, I was sure, would be keeping an eye on me. After all, I was the kid who disobeyed direct orders and stole a shuttle.

We took our time crossing the thirty miles. Jenny and I had fitted extra seats on *Roadhog* back at the Can and now the exploration party was belted into them behind me. What with equipment lashed to every available pipe and strut, we looked like a gypsy wagon.

Jupiter hung off to the left. This far out it didn't fill the sky any more; its orange bands were creamy and smooth, with no detail,

and Ganymede was a frozen silver dot at its side. The scenery hadn't really changed that much, considering that we were fourteen million miles out from the Can.

J-11 was tumbling slightly and I had to correct several times before we were hanging steady over one spot on its surface. I nudged us in slowly, watching the shadows below shift as the tiny moon rotated in the sunlight. If the meteor swarms stayed on schedule, another wasn't due from J-11 for two weeks, so we felt fairly safe.

Nobody said anything; most of them were busy taking pictures and watching their meters. After I fixed our orbit there wasn't much to do; J-11's gravity was so weak it would take years to draw us in.

After several minutes I said, "Dad?"

"Yes, son?"

"See that big crater down there? The big one, between the twin peaks?"

"Ummmm, yes. What about it?"

"For a minute there I thought I saw a bright flash, like metal reflecting the sun, right down at the bottom."

"I can't see the bottom."

"It's in shadow now. The rock must be dark there, anyway; I couldn't see anything even when the sunlight was slanting down into it."

"Let's go in closer." one of the other men said. I looked at Lt.

Sharma, who was sitting next to me. "Go ahead," he said.

I nudged the *Roadhog* nearer. The crater grew. I was busy watching our trajectory and didn't look up until someone yelled, "Hey! There's a hole in it."

He was right. The "crater" was a bottomless pit, several miles across. Where you would expect to see a flat floor there was nothing. Just blackness.

There was a lot of chatter over suit radio. I tuned it out and concentrated on my piloting. Every few miles Lt. Sharma would confer with the Commander and obtain permission to go in closer. One of the men behind me was running a portable television camera so they could follow what was happening back on the *Sagan*.

The hole remained black. We went in closer. One mile, then a half, then four hundred yards. One of the scientists checked the radiation level and found nothing more than the usual background count. I aimed the *Roadhog's* headlights off to the side and got back a few sparkling reflections from the distant walls. The sides of the pit seemed to be fused and melted here and there.

Lt. Sharma asked for permission to go into the pit. The Commander argued a little and then granted it. I took her down.

The radio was quiet now. No one had anything more to say.

Just before we went in I looked to the side and saw the rim of the crater rise up and then be blotted out by the edge of the pit. Behind us the *Sagan* jockeyed to stay within our line of sight; otherwise we would lose radio contact.

There still wasn't much to see. The pit walls were miles away and most of the rock could have passed for coal; it was *dark*.

"Lieutenant! I am registering an increased magnetic field," one of the men behind me said.

"What's that?" my father said, pointing. I turned the craft to bring the headlights toward the walls of the pit. A dim coppery ribbon lined the wall. I rotated the *Roadhog*; the band formed a thin ring completely around the pit. We were passing through the center of the ring.

"What is it?"

"Looks like metal."

"Impossible."

"Quiet," said Lt. Sharma. He spoke to the Commander. I didn't slacken our speed.

Another ring came into view. As we passed through it I thought it looked a little closer to the shuttle. I wondered how such a natural formation could come about—something to do with the evolution of the asteroid belt? The rings were miles across, far larger than the Can.

We came to another. And another. They were getting closer

together. Smaller, too: the pit was narrowing.

"Something is reflecting light ahead," Lt. Sharma said, breaking a long silence.

I slowed the shuttle. It was hard to make out any detail. We passed through a chain of rings, each a little smaller than the last. I was beginning to get a creepy feeling.

Something metallic lay ahead; it looked like the same coppery stuff in the rings. I brought us up to it slowly, ignoring the radio conversations. It wasn't until we were quite close that I saw that the pit had ended; the metal object was sitting on a wall of dark rock.

We hung about a hundred yards away from the wall. The coppery object was a hemisphere without any visible markings, about sixty feet across.

I glanced at Lt. Sharma. He was looking off to the side, studying something. He pointed toward the walls of the pit. "That way," he said.

I was more interested in the metal dome, but I followed orders. We coasted along parallel to the pit floor. I saw a blotch ahead that resolved into a rectangle of white.

"Hey!" someone said.

Suddenly the pit floor was gone. I looked down and saw nothing but blackness. There was an opening below us. Lt. Sharma pointed at it and nodded to me. I took the *Roadhog* into the hole, a little nervously.

The walls in this hole didn't narrow. There was about two hundred yards clearance. It took a moment before I realized that there were only walls on two sides, to left and right; in the other directions there was only darkness.

What we had thought was the floor of the pit was only something blocking it, like a cork that didn't fill the neck of a bottle. Now we were inching around the cork.

Something loomed ahead. I slowed us.

"Looks like a pipe," someone said.

"Yes, it does," my father answered. "About fifty feet in diameter. It comes out of the wall on the right."

"And connects into the rock on the left," Lt. Sharma said. He pressed his lips together as he studied it.

I inched us around the pipe. In the shuttle's pale headlights it looked flexible; where it joined the wall there were folds in the material. Beyond this pipe we could see others, evenly spaced.

"Let's go back," Lt. Sharma said. "I want to have a look at that white thing."

There was some argument, but I was taking orders only from the Lieutenant. I turned us around and out of the hole. I fumbled with the controls a little. The enormity of this thing was just starting to hit me.

When we came out I steered us toward the white rectangle I had noticed before. It was set into the wall of the pit, flush with the rock, and about a hundred yards on a side.

There were odd-shaped openings in it, some with curlicues of metal standing beside them. It was hard for me to get my bearings as we approached; piloting in the dark is tough. I stopped us twenty yards from the face of the thing.

Lt. Sharma turned around and pointed out two men to go with him. They cast off together and coasted over using their suit jets. It wasn't until they had touched down on the surface of the thing that I recognized one of them as my father.

There was an eerie stillness about the place. No one talked. They examined the surface for a few minutes. My father said it seemed like aluminum but was stronger. They conferred about their next move and decided to go into one of the openings. There was something that looked like abstract metal sculpture next to the nearest one. They carefully clipped a line to it. Then the Lieutenant disappeared from sight over the edge of the hole. The opening was as big as the *Roadhog* and seemed to have smooth sides. My father went in after the Lieutenant, following the line. The third man stayed at the edge, looking down and holding a

hand torch for illumination.

We waited. As soon as Dad and the Lieutenant were out of sight we lost radio contact with them. The other men started talking, but I ignored them. I was busy watching the mouth of the opening and looking for anything coming at us from the darkness all around. Nothing moved. A slightly lighter circle far away showed stars; that was the mouth of the pit. We must have come seven or eight miles into J-11, at least.

The minutes crawled by. It was spooky, sitting there in nearly total darkness. It seemed as though my father had been gone a long time. What could they be doing in there? I wondered if Commander Aarons knew how long they had been in. Maybe he hadn't noticed—

The man at the edge waved to someone below. A moment later my father coasted out, holding the line. The Lieutenant followed. They touched helmets and gestured back at the opening.

After a moment Lt. Sharma looked our way and said over radio, "Why don't three more come down. I'm sure you all have measurements to make."

I didn't wait for the three to be picked. I swarmed over the side and flew across on jets. The white metal rang faintly under my boots as I landed. For a few minutes I helped set up cameras and other gear. Then I drew Dad aside.

"How long are we going to be here, Dad?" I said. "I'd like to have a look inside."

"Not long enough. I don't want people haphazardly wandering around, anyway. Could be dangerous."

"Well, okay. But—who were they?"

"The people who built this?" He shook his head. "There is no way to tell. From the size of the doorways inside—if that is what they are—I would say they were large, at least twice as tall as we are."

"They couldn't be from Jupiter?"

"Not likely. Jupiter is a thick atmosphere over an even thicker ocean. There are no continents down there, no land at all. Could a fish discover fire—or build a rocket?"

"What other possibilities are there? There wasn't any life on Mars, or even Ganymede."

"They weren't from this system, John. I just saw some evidence to support that when I was inside. There is a—well, I can only guess that it's a display board, but I don't know how it works. It came to life when I entered the room. It seems to be a holographic three-dimensional projection of the nearby stars, with Sol at the center."

"About five light years away, as nearly as I can estimate, there is a green object. It lies just beyond the Centauri system, where I know there isn't any star. Besides, the

green dot lies on a thin blue line that runs inward from the edge of the projection. The blue line stops here at Sol. Something tells me it is a charted course for a star ship, and that green dot is the ship."

"Five light years out. Maybe someone was here before the Can was constructed, and left."

Dad smiled. "I think we would have noticed something. We've had probes around Jupiter for fifty years."

"Then they're not going away? They're . . . coming?"

"That's my guess. It fits the rest."

"What rest?"

"This tunnel. Those metal rings we saw reminded me of our ion engines. I'll bet they are superconducting magnets. The tunnel is a giant induction accelerator."

I blinked. "Huh? For what?"

"The meteor swarms we saw. Look at that thing," he said, pointing off into the gloom at the huge rock "cork" we had found blocking the tunnel. "I have a hunch that will be the next swarm we see. Something is pumped into it through those pipes, then it's broken up and accelerated down this tube."

"A giant shotgun."

"Aimed at the poles of Jupiter," I said.

"Yes. . ." I could see Dad was thinking. He looked at some of the oddly twisted pieces of metal

around us and frowned. Whatever the metal was, it had iron in it; our magnetic boots held. "You know, John," he said at last, "I'm not a believer in coincidence. The storms, the meteor swarms, suddenly you found life spiraling out of the atmosphere on electric field lines—it all happened at once."

"I wonder what we would find if we opened that rock in the tunnel," I said.

"What do you mean?"

"Could somebody be, well, *seeding* Jupiter? Getting it ready for whatever is in that star ship?"

"Seed it for what?"

"I don't know. To produce food? Maybe for a fish than can build star ships?" I grinned.

"That's a big project. Jupiter has millions of times the life-supporting volume Earth does."

"Size won't stop men; I don't see why it should stop anything else that can think. In fifty years we might be wrapping a sheet around Ganymede's atmosphere to keep the oxygen in and make a better greenhouse out of it. Given time maybe we can do something with Jupiter, too—if somebody doesn't beat us to the property first."

Dad chuckled and punched me playfully in the arm. "You win. We're all going to be cooking up theories about this place, and no one will know the right answer until that green dot gets here."

"You and I will be around to see

it happen, Dad," I said seriously. "ISA can't ship me Earthside now."

"Not without a fight from me, and the Commander too, I expect." He looked over at the other men. "Better pack up!" he called. "We ought to bring the whole expedition down and set up a base at the edge of the crater. We want to do this carefully."

He moved over to talk to the rest. I looked back at the circle of stars at the end of the tunnel. The *Sagan* was a bright point. Jupiter's bands were edging into view.

THE BANDS STILL looked new to me. They change all the time, making different colors and streams. The Red Spot swirls a little, just fast enough to notice. I was going to see a lot of the bands; I might spend my whole life out here.

Somebody has to be around when the owners of J-11 return. There'll be a whole colony out here by then, waiting. Zak would stay, probably, despite his fatalism. Mom and Dad would; it was in their blood.

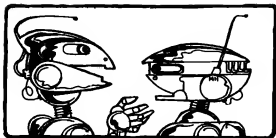
Jenny too, I guess. That part was up to me, and I thought I knew what the outcome would be.

Yuri might even stay. Well, I'd handle that too.

In fact, when you come right down to it, any race that could come this far from Earth and live in a tin can, all for the sake of

(continued on page 129)

# BOB SHAW & WALT WILLIS the Clubhouse



When *The Clubhouse* was inaugurated in the late 1940's, its purpose was to introduce the readers of *AMAZING STORIES* to the world of sf fandom and the bulk of its space was devoted to reviews of the fan magazines which represent fandom. John D. Berry revived *The Clubhouse* in the July, 1969 issue of this magazine (after an absence of more than fifteen years) with the same aim in mind. His success was considerable, but as he explained, last issue marked his final contribution.

His successor will be Ed Smith, to whom fanzine editors can send copies of their magazines for review now (Ed Smith, 1315 Lexington Avenue, Charlotte, N.C., 28203), but before Ed takes over this column we are using its space to republish, for the first time in professional print, Bob Shaw and Walt Willis's classic story, *The Enchanted Duplicator*.

First published in 1952, *The Enchanted Duplicator* is a delightful allegory which described the odyssey of a young man (Jophan) through the various realms of sf fandom. Loosely based on *Pilgrim's Progress*, the story was conceived and begun by Bob Shaw (yes, the same Bob Shaw whose "Other

*Days, Other Eyes*" was recently serialized in these pages), but, when he found himself losing momentum, Walt Willis joined him in a collaborative effort and finished the story. Shaw and Willis were members of *The Wheels of IF* (Irish Fandom), fellow Belfasters with James White and George Charters (who was instrumental in the original production of *The Enchanted Duplicator*), and obviously destined, even in 1952, for *Greater Accomplishments*.

Due to its length, we are serializing *The Enchanted Duplicator* here in four installments. If the wait seems interminable to you, the third complete edition is still available from Arnie Katz (59 Livingston St., Apt. 6B, Brooklyn, N.Y., 11201) for \$1.00. (The previous two editions are long out of print.) This edition is enhanced by C. Ross Chamberlain's many fine illustrations as well.

Since *The Enchanted Duplicator* was not written to introduce non-fans to fandom, but more as an affectionate statement of the authors' own philosophy, some of its allusions may strike you as obscure. With this thought in mind, I have provided footnoted explanations where appropriate.—tw



# THE ENCHANTED DUPLICATOR

by Bob Shaw & Walt Willis  
(Part One)

## CHAPTER ONE: IN WHICH THE SPIRIT OF FANDOM APPEARS TO JOPHAN

Once upon a time in the village of Prosaic in the Country of Mundane there lived a youth called Jophan. Now this youth was unhappy, because in all the length and breadth of Mundane there was no other person with whom he could talk as he would like, or who shared the strange longings that from time to time perplexed his mind and which none of the pleasures offered by Mundane could wholly satisfy. Each day as Jophan grew nearer to manhood he felt more strongly that life should have more to offer than had been dreamed of in Mundane, and he took to reading strange books that told of faraway places and other times. But the People of Prosaic mocked him, saying that the things described in his books could never come to pass, and that it was as foolish to think of them as to aspire to climb the great mountains that surrounded the Country of Mundane.

The mighty peaks that hemmed in Mundane were ever present in Jophan's thoughts, for since childhood he had loved to look at them and wonder what lay on their other side. At times in the late Summer he had seemed to see a curious luminescence in the sky beyond them and once he had even fancied that he heard the sound of happy voices singing, borne over the vast distance on the still Summer breeze. But when he mentioned these things to the people of Prosaic they laughed at him and said his fanciful imagination was playing him tricks. Even if anyone could climb these impassable mountains, they told

him, there could be nothing on the other side but howling wastes where no man could live except perhaps madmen and savages.

Jophan believed them, for they seemed older and wiser than he, and tried to put strange thoughts out of his mind. But he still read the strange books that told of faraway places and other times, and in the long evenings of Summer he would go away by himself into the fields and read until nightfall.

Now one day while he was reading in a cornfield the drowsy fragrance of the corn lulled him to sleep. In his sleep he dreamed that a fairy came to him, a girl of wondrous beauty and shining with a light brighter than the noonday sun, so that Jophan shrank away and hid his eyes. The fairy came nearer and spoke to him.

"Have no fear," she said. "I am your friend."

And now Jophan looked and saw that indeed the fairy gazed on him with kindness and love, and he took courage.

"Who and what are you?" he asked.

"I am the Spirit of Fandom," said the fairy serenely.

"What is Fandom?" asked Jophan wonderingly.

The fairy looked down on him with compassion. "Have you not been searching for it all your life?" she asked. "Watch!" So saying, she touched his forehead with her wand, which was called Contact, and thereupon Jophan saw a vision that filled him with Joy.

"This is indeed what I have been searching for without knowing it," he cried. "Oh, Fairy, tell me how I can reach your realm, for I wish to become a Fan more than anything else in the world."

"The Way is hard," said the Fairy, "for it lies over the Mountains of

Inertia which surround Mundane."

"But those mountains are unclimbable," protested Jophan.

"To a True Fan anything is possible," replied the Fairy. "But wait. I have shown you only the superficial aspects of Fandom. Now I will show you something of its inner essence." With those words she touched his forehead with her other wand, which was named Fanac,<sup>1</sup> and Jophan saw a second vision so glorious that he was quite overcome with the wonder of it.

As soon as he could speak he cried aloud, "Oh Spirit of Fandom, tell me how I may become a True Fan and publish the Perfect Fanzine, for that is what I desire more than anything in the world."

"I see I have chosen wisely," said the Fairy approvingly, "but the way to your heart's desire is long and hard. To reach it you must obtain the Enchanted Duplicator, sometimes known as the Magic Mimeograph. It lies in the very heart of Fandom, on the top of the High Tower of Trufandom, and the path to it is long and beset with many dangers."

"I care not for danger," said Jophan stoutly, "so long as I can publish the Perfect Fanzine, for that is what I want more than anything else in the world."

"Very well," said the Fairy. "Then take this shield, which is called Umor. If you polish it every day and keep it shining it will protect you from many dangers."<sup>2</sup>

"But how will I know the way?" cried Jophan hastily, for the Fairy was already beginning to disappear.

"If you are a True Fan you will know the way. . ." said the Fairy faintly, for she had now almost completely faded into invisibility. For a moment a faint glow remained in the air from which seemed to come the whispered words

"Good luck," and then she was gone.

Jophan awoke from his dream and realised that night was almost upon him, for the sun was setting behind the Mountains of Inertia and their shadows were advancing swiftly on him across the level plains of Mundane. Behind the mountains there lingered a sea of glorious light, and a sadness overtook Jophan to think that his vision had been but a dream. But as he got to his feet he noticed that on the ground beside him there lay a shield of curious workmanship. Jophan picked it up incredulously and then turned his eyes once again to the mountains, his face transfigured with wonder and resolve.

#### CHAPTER TWO: IN WHICH JOPHAN STARTS ON HIS JOURNEY

That evening Jophan told his parents of his intention to scale the Mountains of Inertia and enter the Realm of Fandom. His mother pleaded with him in vain, and in a fit of rage his father burned all the books that told of faraway places and other times, but nothing could shake Jophan from his purpose. As dawn broke he set out for the mountains, carrying all his possessions on his back and turning a deaf ear to the protests of his friends, who ran behind him begging him to return.

They soon fell far behind, and by noon Jophan arrived at the borders of Mundane. He found himself at the great arterial road that ran to the capital city. He was confused by the traffic that roared along the road, and stood anxiously looking for an opportunity to cross. As he waited he noticed other travellers boarding luxurious coaches bound for fabulous destinations such as Wealth, Success, Respectability and other places, but none of them seemed to be going in the direction of Fandom. During a mo-

mentary lull in the traffic Jophan marched steadfastly across the road. Then he took the narrow path that led through the Forest of Stupidity, which forest grows all around the Country of Mundane and shelters it from the searching winds that blow out of Fandom.

The path was overgrown, and in several places Jophan had to cut his way through brush and thickets, but by mid-afternoon he had made his way to a beautiful clearing where he thought he would rest before continuing his journey. To his surprise he noticed that the clearing was laid out as an aerodrome, and that a beautiful silver flying-machine was even now landing. As he watched, the pilot and a passenger got out. The passenger seemed to fall to the ground and lie there motionless but the pilot came trotting over to Jophan. He was a fat, prosperous-looking man, and he eyed Jophan with calculating cordiality.

"Good afternoon, young man," he said genially. "My name is Swift. May I ask where you are bound for?"

"My name is Jophan," said Jophan, "and I am on my way over the Mountains of Inertia to enter Fandom and produce the Perfect Fanzine, for that is what I want to do more than anything else in the world."

"And so you shall!" said Swift, eyeing Jophan's bundle. "But, my dear young man, surely you are not thinking of *climbing* those mountains? Why, my beautiful machine will fly you over to Fandom in no time. And as for the Perfect Fanzine, my aeroplanograph will produce that for you too. No trouble at all. All you have to do is give me that bundle of yours."

"The Fairy said I must get the Enchanted Duplicator," said Jophan doubtfully.

"That old thing?" jeered Swift. "Why, no one bothers with old-fashioned stuff like that these days. I've some proofs for you."

As he hurried past the aeroplanograph to his office, Jophan observed that the passenger was crawling painfully over the grass, calling feebly to Jophan. Jophan hurried over to him and could scarcely restrain his tears as he saw the stranger's pitiful condition. The wretch was pale and emaciated, his clothes in rags, and his hair prematurely white. Jophan bent down to hear what he was saying. "Don't trust him," whispered the passenger through his parched lips, "neither him nor his brothers, Offset and Litho. They will fly you over the Mountains of Inertia, as they claim, but you won't be able to land anywhere. You will fly around in circles for months looking down on Fandom until all your money is gone and you die of starvation like me. Be warned before it is too late. There is no easy way. . ."

His voice trailed off into inaudibility, and Jophan realized that he was dead. Solemnly he consigned his soul to Heaven and prayed that the Great BNF 'above would have pity on him. Then he ran across the aerodrome and resumed his journey through the forest.

Soon the trees began to thin out and the ground to rise, and Jophan knew he had arrived at the foothills of the Mountains of Inertia. As he paused to strap his bundle more tightly about him he was startled to hear what seemed to be a train whistle nearby. He went forward curiously and soon found himself facing a large and imposing notice. In clear and elegant letters it said: TO THE TUNNEL. LETTERPRESS RAILROAD. MUNDANE TO TRUFANDOM TOWER DIRECT VIA TUNNEL. Beyond it Jophan saw a dark tunnel leading into the

mountain, and before it a resplendent locomotive and a single tiny carriage behind it.

Had it not been for his encounter with the Passenger, Jophan would have bought a ticket and boarded the train, but instead he stayed where he was and watched the locomotive as it steamed toward the inky blackness of the tunnel, but it had barely reached the entrance before it shuddered to a stop. To his astonishment Jophan saw the driver, fireman and passengers get off and run to the back of the train. With immense labor they lifted the last section of the track and staggered with it into the tunnel. After some minutes they reappeared and boarded the train again. The train moved another few yards into the tunnel, and the process was repeated. Jophan watched them until they finally disappeared into the tunnel, marvelling at their obstinacy and patience. It may be, he thought, a wonderful railroad, but if they have to set every one of the lines by hand it will be years before they even reach Fandom, never mind Trufandom.<sup>3</sup>

He listened for a while to the groanings and clankings still coming from the tunnel and then set off on the steep path up the mountain.

#### CHAPTER THREE: IN WHICH JOPHAN TARRIES IN THE CIRCLE OF LASSITUDE

The path was steep, and by nightfall Jophan was near exhaustion. Worse, he had entered a region of thick fog, and he could no longer see the path in front of him. Afraid lest he would take a false step and fall down the precipitous slope, Jophan stopped helplessly and resolved to wait until the fog cleared. But as the sound of his own breathing subsided he heard voices above him. He felt his way inch by inch along the path and suddenly found himself at the en-

trance to a brilliantly lit, circular cave. It was full of people of all ages talking and laughing and playing games. As soon as they noticed his presence they hospitably invited him in, gave him something to drink, and then went on with their talking and playing.

After a while one of the youths finished his game and came over to him. "Where are you bound for?" he asked politely.

"I am going to Fandom to publish the Perfect Fanzine," said Jophan, "for that is what I want to do more than anything else in the world."

"But *this* is Fandom!" exclaimed the youth indignantly.

"Well, not exactly," said an older man who overheard, "but it's good enough for us. Actually this is only the Circle of Lassitude. We've heard of Fandom, of course, but it's such a lot of trouble getting over those mountains that we don't know much about it. We have all we want here, you see, so we're quite happy. If you want to know something about it, though, I could introduce you to those three old men in the corner. They lived in Fandom for a time long ago, until they came back for a visit to the capital of Mundane. They were never able to tear themselves completely away or to face another journey over the mountains. It's easier to come back, you know. By the way, my name is Leth, Robert George Leth. They call me Leth R. G. for short."

The Circle was so pleasant and hospitable that Jophan decided to spend the night in the cave. But they had so plied him with drink that he slept most of the following day until it seemed too late to start. The same thing happened the next day and the next, and by degrees Jophan sank into a stupor, in which he forgot the object of his quest. Now and then he felt dimly that he had lost some

precious thing but whenever he tried to recall what it was one of the Circle would press a drink into his hand and distract his attention with the latest verses of the wits of Mundane.

One day while Jophan was talking with the others in the cave a great wind blew from Fandom and a sheet of paper whirled into the cave. Jophan picked it up and examined it curiously. Its appearance stirred half-forgotten memories of the dazzling vision he had had from the touch of the wand called Fanac. "Why," he gasped, "it's... it's a Fanzine!"

"So it is," said Leth R. G., idly. "They blow in from Fandom occasionally. We never pay much attention."

Without another word Jophan shouldered his bundle and marched out of the cave. The others watched him in silence, and after he was gone it was a long time before anyone spoke. Then they renewed their talking and playing twice as loudly as before, as if they were trying to convince themselves that they were happy.

#### CHAPTER FOUR: IN WHICH JOPHAN MEETS A TRAVELLER FROM FANDOM

Jophan had been weakened both in mind and body by the drinks he had imbibed in the cave, and he found the going very difficult.

The path became steeper and steeper, and one by one he had to abandon all the possessions he had brought with him. Even so, by evening he was so tired that he had to rest on a ledge to regain his strength. Below him he could see the path winding down into the Region of Fog, strewn with his cherished possessions. Further down the green Forest of Stupidity was spread out below him, and beyond it the peaceful country of Mundane basking in the

light of the setting sun. Shivering with cold as he was, for the Mountains of Inertia screened the sunlight from him, Jophan found the prospect enticing and it came to him how easy it would be to retrace his steps down the path, gather up his possessions, and return to the placid life of Mundane.

While he was musing thus he heard a terrible sound above his head, and cowered into the shelter of the ledge just in time to escape a deadly landslide of rocks and loose stones. Behind them down the path there slithered and stumbled the highest horse Jophan had ever seen, and on his back an angry little man, pulling at the reins and swearing continually. Every now and then the horse dislodged another stone which clattered down the mountainside, awakening a fresh landslide.

"Pardon me," said Jophan, "but you really should be more careful. You might injure some of the other pilgrims on the path."

"Serve them right," snarled the little man, without dismounting from his high horse. My name is Disillusion—the Disillusion, y'know. Who are you?"

"My name is Jophan," said Jophan, "and I am on my way to Fandom to produce the Perfect Fanzine, for that is what I want to do more than anything else in the world."

"More fool you," sneered the other. "Only a fool would want to enter that place."

"Why, what's wrong with it?" asked Jophan.

"What's wrong with it?" repeated Disillusion incredulously. "Why, *everything's* wrong with it! They're either stupid or mad, every one of them. Why, they didn't even come out to greet me when I arrived—*me*, mind you! At first they even pretended not to see me until I got down off my horse,

and when they did speak to me I couldn't understand a word they were saying. And their customs! I've never seen anything like them!"

"Well, after all," said Jophan, "it is a different country. Maybe if you had tried to learn their language. . ."

"Nonsense!" snapped Disillusion. "They were just trying to keep things from me and laughing behind my back. Well, they can have their secrets. I don't want to have anything to do with them. They were all against me, I tell you. Imagine, not even thanking me for entering Fandom after all I tried to teach them. . ."

Speechless with indignation, he spurred the horse on again and vanished down the path. Jophan thought he was the most conceited and self-centered person he had ever met, but nevertheless the encounter refreshed him. It seemed to him that the dislike of such a person was a very good recommendation for Fandom. With this new vigor he set off again on his journey and by nightfall he had reached a point from which he thought he should be able to reach the summit tomorrow. Happy in the prospect of seeing Fandom so soon, he curled up in a little cave and went to sleep.

#### CHAPTER FIVE: IN WHICH JOPHAN ENTERS FANDOM

Next morning Jophan arose with the first rays of the sun and set off towards the now beckoning summit in good heart. He was overjoyed to see that there were no more gloomy people like Disillusion coming galloping by. They are really very rare in Fandom, he reflected, and the thought put him in such a good humor that he redoubled his efforts to reach the top.

Thus far in his travels Jophan had been journeying alone, but now he

began to overtake others on the same path. It pleased him greatly to hear their fannish talk, and by the time he had achieved the peak he had befriended several. The closest of these newfound friends were Mr. Plodder and Mr. Erratic.

The former was a slow-moving climber, who went straight at every obstacle with grim determination, sometimes-losing ground but in the end winning through by the great quantity of his effort. He had no shield of Umor, as most of the other travellers had, but Jophan noticed that his skin was tremendously thick and it looked as though even the fiercest blow would but glance off it.

On the other hand Mr. Erratic scorned to take great pains as Mr. Plodder was forced to do. His method of progress was to wait for an opportunity to make some great and brilliant leap which enabled him to do in one second that which had taken the other a full minute.

At times Jophan was greatly impressed by some unusually clever bit of work by Mr. Erratic, but he noticed that the other seemed to have very little real strength and would rest for so long between leaps that Jophan left him far behind.

In a short time Jophan reached the top and felt compensated many times over for the arduous climb. A smooth green slope ran gently downwards into the most beautiful country Jophan had ever seen—Fandom.

It was a land of streams and meadows and valleys, over and between which ran meandering roads, dotted here and there with cheerful cottages. Beyond all this, in the mists of distance, he saw yet another peak which was too far away to be clearly seen. Jophan saw with wonderment that it seemed to have

a golden radiance about its summit.

With glad cries the band of travellers in which Jophan had found himself ran down the gentle grassy slope. Each and every Neofan felt in his heart that he would soon reach the new peak which was called the Tower of Trufandom, for here they had no Mountains of Inertia to climb, and just the bright inviting land of Fandom to cross.

After a moment's hesitation, Jophan ran after them, and so brightly did the sun shine on Fandom that he and the other Neofen (as they now were) were blinded by its light and quite failed to notice the hazards, of which in Fandom there are many.

As Jophan ran he was astonished and horrified to hear the eager cries of those in front turn to screams of fear and consternation. On shielding his eyes from the sun he perceived that some distance ahead the verdant ground had become soft and treacherous underfoot, in the manner of quicksand. And to his dismay he saw that many unfortunate wretches had broken through the surface and were being sucked down, drawing down with them others who had sprung to their aid.

When Jophan saw the horrible purple stains that spread from underneath to clog the victims' mouths and nostrils he realized that they had blundered into the dreaded Hekto Swamp, and that there was no help for them.<sup>6</sup> With a last pitying look he bore to the right onto ground which had at first seemed uninviting because of its slightly stony appearance, but which bore up underfoot, unlike the seductive smoothness of the Hekto Swamp.

#### CHAPTER SIX: IN WHICH JOPHAN VENTURES INTO THE JUNGLE OF INEXPERIENCE

Jophan soon found out that the

firmness of the ground was due to the presence of mighty trees whose roots spread through the soil, making it a secure if difficult surface to walk on. He learned that these great trees had flourished in Fandom since time immemorial, and were called Abydix, Roncoaks and Ellam trees. There was another lengthy name beginning with "G" which he was unable to remember.<sup>7</sup>

Jophan had travelled but a short time over this difficult but promising path when to his alarm he found himself confronted with a dense jungle. This, the Jungle of Inexperience, had not been visible from the mountains, but apparently it stretched all round Fandom and there was no alternative but to try to find a way through it. Jophan plunged bravely into the undergrowth, but the numerous pitfalls and creepers so impeded his progress that he was eventually brought to a standstill.

As he paused to regain his strength, he was startled to hear a heart-rending scream close by. He forced his way through a dense thicket and found himself on the brink of a mighty torrent which roared through the jungle in the direction of the Hekto Swamp. The waters that leaped and churned along its course were as black as ink, and Jophan realized that this was the notorious Torrent of Overinking. He was horrified to see that some yards downstream a Neofan, doubtless the one that had screamed, was being borne away by the flood. The unfortunate Neofan's cries of help wrenched Jophan's heart, and he ran as quickly as he could along the bank in an effort to reach him. It was plain, however, that the waters were too swift-moving, and he soon fell behind. The calamities that Jophan had seen overtake his fellow-travellers began to weigh heavily upon

his spirit.

He was, therefore, pleasantly surprised to see on rounding a bend that a number of people were gathered on the bank and had just succeeded in rescuing the Neofan from the clutches of the torrent. On coming closer he saw that there was a huge pile of sheets close to the edge and that the rescuers had knotted these together and lowered them to the drowning Neofan.

He discovered later that the sheets which had been used to rescue the Neofan from the Torrent of Overinking were known as Slip Sheets.

Jophan joined the group and they all set off down the bank, having agreed that it would be better to avoid the Torrent of Overinking altogether rather than depend on Slip Sheets to rescue them. Further along, however, they were overjoyed to discover a bridge across the torrent. Laughing happily they crossed the bridge which bore an inscription proclaiming it to be the Bridge of Moderation, and set foot on the other side in confident hope that their troubles were now at an end.

However, it seemed they they were not yet at the end of the jungle. Indeed, as they progressed, the path became more and more difficult to follow, as it would its way among overhanging vines and creepers, all of a sickly light green aspect which reflected itself in the wan faces of the travellers. This unnatural pallor was caused by the fact that it was very rarely indeed that a cheering ray of sunshine ever penetrated the converging vegetation.

It was in these unpleasant surroundings that darkness finally forced the band of Neofen to pitch camp for the night.

—BOB SHAW & WALT WILLIS

## NOTES:

1. "Fanac" means, literally, "fan activity;" in this context it refers to a vision of what activity as a fan would be like. Curiously, several years after *The Enchanted Duplicator* was first published, a Belgian fan, Jan Jansen, began publication of a fan-news fanzine which he called *Contact*. When, after a year or so, it folded, Terry Carr and Ron Ellik began a U.S.-based successor, *Fanac*, which subsequently won a Hugo and is still regarded as the best fanzine of its kind. Carr and Ellik had forgotten this reference when they began *Fanac* and were stunned by the coincidence.

2. The "Shield of Umor" is an essential ingredient in fandom, as Shaw and Willis demonstrate; a sense of humor lubricates the occasional frictions produced by fandom.

3. In the late forties and early fifties most fans used mimeographs to produce their fanzines but a few chose the more impressive appearance possible with photo-offset printing, a process which was then quite expensive. Swift & Co. of St. Louis offered "Planographing" (a form of offset printing) at stiff rates, but those fans who did use offset all used Swift. Their fanzines were usually too ambitious, in appearance at least, to quite mesh with the rest of fandom.

4. BNF: Big Name Fan.

5. Some fans used letterpress to publish their fanzines, setting each line by hand with loose type. It was a laborious process, but one with which Willis and Shaw were quite familiar: Willis' first fanzine, *Slant*, used this process and the two spent many long hours in Willis' attic hand-setting type, of which they had only enough for a page or two at a time.

6. Another duplication-method which



is now very rarely used for publishing fanzines is hektograph, a process which uses a pan of jelly and purple ink. Its virtues are incredible cheapness and the accessibility this affords young fans; its drawbacks are a quite-short print run (rarely more than fifty copies before the ink fades to illegibility) and messiness which covers the unwary with indelible purple ink.

7. A. B. Dick was for decades the major manufacturer of mimeographs in this country; in Britain the leaders were

Roneo and Gestetner. This chapter deals with some of the problems encountered with mimeographs when the operator is a novice; one is overinking, which produces smudgy, hard-to-read pages and offsets on each sheet's back unless slipsheets are interleaved as each sheet comes out of the mimeograph. Slipsheeting, unless the machine has an automatic device to do the job, is a tiring, time-consuming task.

—TO BE CONTINUED—

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## EDITORIAL

(continued from page 4)

other markets. A friend of Assistant Editor Grant Carrington, he's also been helping out occasionally with the "slush pile" manuscripts. He'll be contributing regular reviews to these pages and helping us get the reviews back on a more regular, contemporary basis.

Bill Noble, on the other hand, is the pseudonym of a more established author who notes that despite the fact that the reviews he contributed to this issue are favorable ones, he prefers

not to use his own name for reviews since many of the books he reviews are edited by editors to whom he sells stories in his normal guise. "I just want to review on the merits of the books in question, without worrying about whether an editor thinks I'm buttering him up if I turn in a 'good' review, or will think me the sort who bites the hand that feeds him, if I don't like a book." So be it.

Next issue we should have our features back to their usual length; see you then.—*rw*

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## LAST AFTERNOON

(continued from page 27)

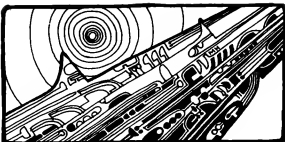
draining, going away. Too late. Too late. Wasted. He felt the wraith-wind of its going in his brain, the alien immensities opening to the imago. Opening—for an instant it was as if the *noion* were still holding a way open, offering to share its dying with him if he could. The longing rose in him, the terrified love toward what he could not

imagine—*O rich and sounding voices of the air—I come! I come!* . . . But he could not, alone, no, and his useless death hung over him, the crashing was beating on his mortal ears. His lips moved, crying "Man is the, is the, that—"

A vast impersonal tonnage fell upon him and the stars ravelled away from his brain.

—JAMES TIPTREE, JR.

# the Future in Books



Arthur C. Clarke: *THE WIND FROM THE SUN*. Harcourt Brace Jovanovich, New York, 1972. Hardback, 193 pages, \$5.95.

This is an anthology of Clarke's short stories which were written in the 60's. The book is less than 200 pages, which illustrates the fact that Clarke does not write much science fiction anymore. During the past 25 years, he has been one of my favorite writers in the field, and he is definitely one of the best of that breed of scientist/writers who have used their background to improve the genre of science fiction. This has become more evident in the last decade where there has been a noticeable lack of such writers, who are willing and able to construct their stories around real scientific premises. Yet Clarke's stories have always been entertaining as well as informative, and it is easy to see how he has become one of the most popular science fiction writers in the field.

It was with this idea firmly in mind that I read *The Wind From The Sun*, hoping to find more of the wit and originality that sparkled in such works as *Childhood's End*, *2001*, and *Against The Fall of Night*.

No such luck.

While reading the stories in this anthology, I got the impression that Clarke has been writing out of a sense

of obligation, rather than a sense of need. Most of the stories are little more than vignettes, with a majority of them not more than 3,000 words. These shorter pieces have various aspects in common, and none of them are praiseworthy. The characters are flat, cardboard cut-outs, standing only on the strength of the name cards that Clarke hangs around their necks: SCIENTIST, SPACE PILOT, OLD MAN, SOLDIER, etc. There has been no attempt by Clarke to justify the existence of any of his characters. They don't think (except in terms of abstract theories and textbook equations) and they don't act like real people. Another characteristic of most of the stories is a crude dependence on a gimmick ending—something that was done well by many writers of the 50's (Sturgeon, Sheekley, Pohl, Kornbluth) when the ideas and themes they used were fresh and original. But this is 1972 and if a writer must draw upon the archives of old SF themes, he must justify that action by ringing new changes on that theme. Clarke has simply not done this.

In one story, "Dial F for Frankenstein," a computer network of telephones takes over the world. Gee Whiz! In another, "The Last Command," a battalion of soldiers are ordered by the President to surrender to the Enemy because their missiles have destroyed

the country. Only guess what? The soldiers aren't good American boys with tears in their eyes—they're good Russian boys. In still another called "Love That Universe," mankind receives a radio message across the light-years that the Galactic Federation has decreed that the only way to save Earth from destruction is to generate a powerful psychic force hitherto untapped by man—the power of L-O-V-E. There is another extremely short piece about the coming return of a race of superaliens from the stars that had originally seeded and colonized the Earth millions of years ago. They tell the Earth that through a mistake eons ago, man had been divided into "almost two separate species," but the aliens would rectify the mistake when they returned to Earth. Guess what race the aliens are?

I could go on with many more examples (the book is full of them), but I think the point is clear. Most of the stories are just tired, unoriginal, and bad. However, the collection is not a total loss, and there are some stories (the longer ones) which show sparks of Clarke's old ability. "Maelstrom II" is a good depiction of a man trapped in a decaying orbit around the moon, who is saved by unexpected but very feasible laws of physics. Clarke takes the time to flesh out the protagonist, thereby proving that he can still do it. In "Transit of Earth," Clarke uses an old theme, but this time uses it to develop a real person, a real character. The story is a moving account of a man's last hours on Mars, and the reader shares in his thoughts and final accomplishments. The title story, "The Wind From the Sun," is a longish description of a space-yacht race to the moon in ships with enormous sails that catch the solar wind. It is by no means original,

but it is informative and well-written.

Probably the best story in the collection is the last one in the book, "A Meeting With Medusa," in which Clarke describes the first encounter with a scientifically plausible, intelligent life-form on the planet Jupiter. The protagonist, Howard Falcon, is a strange man (you don't know *how* strange until the end!) who survives the dangerous mission of descending through the thick atmosphere of Jupiter in a new type of spaceship.

One story, however, does not justify the existence of this book, especially for the \$5.95 price. It is often said of a writer of Clarke's stature that he could send in a page from the New York City phone directory to his editor and it would be published without question. But most of the stories in this collection wouldn't pass the Sidney Glutz Test. That is, if Sidney Glutz had written them, they would have never made it out of the slush pile.

It was hard to write a review like this, because I have always admired Clarke's work in the past. But there comes a time when one must be objective. If you're a Clarke fan and you must have this book, at least wait for the paperback.

—Thomas F. Monteleone

Gardner R. Dozois, editor: *A DAY IN THE LIFE*. Harper & Row, New York, 1972. Hardback, 288 pages, \$6.95.

There are two sorts of anthologies in the fantasy and science fiction field: reprint books, an old and popular creature, and new story anthologies, less venerable perhaps but drawing their own devoted audience. *A Day in the Life*, edited by Gardner R. Dozois, is a collection of previously published stories put together under the common

theme of everyday life in alien times or places. That should not imply that the stories themselves are in any way "everyday". They are not. Indeed, they are some of the finest examples of the short fiction form that SF has produced within the last two decades. They are chosen with care and exceptional good taste, not only for the wide range of styles and subject matter, but also for the manner in which they work together, making an organic whole as opposed to the slapdash, rather puzzling packages most reprint anthologies seem to be.

It might seem to some people that putting together such a collection is not a very difficult task; all one has to do is shovel enough of other peoples' stories together to make a book, then stop. Certainly this has been done often enough. But Dozois' own enthusiasm reveals itself in the always perceptive introductions that he has provided for each story. He shows remarkable insight into the problems of a writer (most readers will recognize that in his short career Dozois has already placed four stories on either Nebula or Hugo ballots) and gives the reader an offbeat preface to what might, in other contexts, be mistaken for "just some more sci-fi yarns".

Concerning the stories themselves, Dozois has chosen well. His table of contents includes the brightest names in the field: Delany, Lafferty, Silverberg, etc. He has mixed stories on their way to becoming standards ("A Happy Day in 2381", by Robert Silverberg) with lesser known (but never lesser quality) works (the exquisite "Mary", by Damon Knight). He is not afraid to reprint "The Lady Margaret", a story by Keith Roberts that forms a portion of that author's *Pavane*, and the readers who have not read that novel are in for

a rare treat. On the whole, the anthology shows an outstanding balance, a well-rounded sampling of themes and attitudes, styles and moods.

The story by R. A. Lafferty, "Slow Tuesday Night", is Lafferty at his most controlled. The central idea is amusing, characteristically oddball, and the rest of the story proceeds from it with its own lunatic logic. There are people and relationships, unlike a lot of Lafferty's stories, and there is his own sort of humor which is never very far at all from tears. There is a fairly obscure story by Cordwainer Smith, a writer who would be difficult to beat as the best creator of short fiction SF has yet turned out. The story is "On the Storm Planet" and, as Dozois says in his intro, it provides a cross-section of Smith's unbelievably rich universe. Also included are "Driftglass" by Samuel R. Delany, one of his rare short pieces; "This Moment of the Storm" by Roger Zelazny; and "The Haunted Future" by Fritz Leiber, the oldest story in the book.

On the whole, then, the book is a brilliant compendium of lives we will never know. The stories individually are first-rate, they are chosen with care and prefaced with thoughtful, incisive commentary. Perhaps it is becoming trite to say that this is a perfect book for library shelves or an introduction to the SF field, but too bad. This is not only a wonderful book, it is a *worthwhile* book, an honest hook. Go ahead and buy it, it's certainly worth seven bucks.

—Bill Noble, 3rd

Robert Silverberg, editor: *ALPHA 2*. Ballantine Books, New York, 1972. Paperback, 310 pages, 95¢.

Robert Silverberg, editor: *NEW DIMENSIONS 1*. Doubleday & Co., New York. Hardback, 246 pages, \$5.95.

It used to be that when one thought of reprint anthologies, one thought of Groff Conklin. Now, of course, that great editor is no longer putting books together for our pleasure. Nearly making up for our loss, perhaps, is the emergence of Robert Silverberg as an editor of impeccable taste and boundless energy. He has begun a series of anthologies with an ambitious aim: rather than sift the SF backlog for stories along a particular theme, Silverberg is collecting stories similar only in that they are all well-written. He cares not for labels: SF, fantasy, new/old wave. He is concerned only with *quality*. That, in itself, is a refreshing attitude.

*Alpha 2* is as strong an entry as its predecessor. Among the stories included are several old favorites (the kind that make you react with a desire to re-read them, rather than "oh, *this* again"), such as Poul Anderson's beautiful "Call Me Joe", Ballard's "The Voices of Time", and Cordwainer Smith's "The Burning of the Brain", a doggone great story. There are stories rescued from oblivion, deservedly so; "Goodbye, Amanda Jean" seemed to be one of those stories published in the magazines, impressing a goodly number of readers, passed over by the handful of annual *Best* collections, and apparently consigned to the shelf with the ancient pulps. The story, by Wilma Shore, was an economical treatment of a cannibalistic theme, a small but potent knockout, and Silverberg has done the SF community a service by giving it a more permanent home.

Other stories include "The Shaker Revival" by Gerald Jonas; Phil Dick's "Faith of Our Fathers"; and pieces by Wyman Guin, Algis Budrys, C. M. Kornbluth, and Jack Vance. As Silverberg says in his foreword, the level of

writing is high, the visions uncommonly clear, and the book, ultimately, entertaining.

It used to be that when one thought of new story anthologies, one thought of Damon Knight's *Orbit*. Of the presently extant series, *Orbit* is the oldest, already becoming the establishment anthology, despite its editor's attempt to introduce SF to serious "experimentation". With the publication of the first of Silverberg's *New Dimensions* books, we have a virile new entry in the field. Where the *Orbits* are beginning to show the first signs of fatigue, *N.D.* presents an astonishingly fine group of stories, thought-provoking and, once again, entertaining despite the new approaches. There is not a trace of the self-indulgence that has given the word "experimentation" such an ugly sense in science fiction. Whatever new modes are used to tell the stories are integral and natural; it may be that some of the stories require a little more effort on the part of the reader, but that isn't a bad thing. The themes and ideas of SF have changed; so, too, has the style. SF is a literature of the future, remember?

Of the fourteen stories all but a couple are absolute super stories. The less successful can be attributed to a difference in tastes between editor and reader. The best include Gardner Dozois' "A Special Kind of Morning" (nominated for both Hugo and Nebula), Josephine Saxton's "The Power of Time", Harlan Ellison's elusive "At the Mouse Circus", "The Great A" by Robert C. Malstrom, and "Emancipation: A Romance of the Times to Come" by Thomas M. Disch, perhaps the best prose stylist in SF today. Other good stories are Ursula Le Guin's "Vaster than Empires and More Slow" and Doris Buck's "The

Giberel”.

Here, as in the *Alpha* books, Silverberg lets all definitions be hanged. He'll print anything, as long as it can hold its own in the best company. Each of the stories in the collection makes a valid point, makes it eloquently, and makes it in such a way that the reader doesn't have to labor to follow the words. *New Dimensions* is a breath of fresh air for the short story devotee; after finishing the volume one looks forward hungrily for *N.D.* number two. The world of SF functions much the same as the real world: natural selection rules our microcosm, too. The good books sell. The good authors sell. And if enough readers are looking forward hungrily, the publishers will take notice. That's what it's all about.

—Bill Noble, 3rd

Gene Wolfe: THE FIFTH HEAD OF CERBERUS, Scribners, New York, 1972, Hardback, 244 pages, \$5.95.

Although this book could be loosely defined and read as a novel, it is actually composed of three separate novellas, of which the title story appeared in *Orbit 10*. If I had to describe this book in just one word, I would have to call it *haunting*, or perhaps *intense*, for it is surely both of these. But it is also more than that. The reader can sense the symbolism and the deeper implications of the book as they lie beneath the surface of the words.

The setting for all three novellas is a strange and forboding one. Twin planets, Saint Croix and Saint Anne, circle each other as they orbit a distant star. They have been largely settled by French colonists from earth; but they are depicted as provincial, dreary, and technologically retarded. The few cities on the planets are little more than set-

tlements in which Wolfe has weaved an atmosphere of a quaint, but strained Victorianism.

The first novella, "The Fifth Head of Cerberus," is a first-person narrative of a strange childhood. The narrator's name is never revealed, as in Ellison's *Invisible Man*, as he embarks on a journey in search of his identity. The narrator is young, intelligent, and perceptive. He is a young boy who lives with his younger brother in his father's baronesque mansion. Except for brief visits to the library, he is forced to live an almost cloistered existence. He has no memory of his mother, never sees his father, and is educated by a robot called "Mr. Million." The boy discovers that his father is a scientist, who has done bizarre biological experiments while maintaining a whorehouse for the aristocracy of the city, Port Mimizon.

The boy's aunt, Dr. Aubrey Veil, is an anthropologist who lives in the mansion, speaks with him about her hypothesis concerning the twin planets' original inhabitants, called "abos." Ever since the earliest days of colonization, there have been legends and reports that the abos were not really humans, but merely animals that were able to change shape and mock any other life-forms in the environment. Using this as a basis, Dr. Veil proposed that all the colonists are actually abos who have assumed the human roles after exterminating the entire population from Earth.

At this point, the principle character of the rest of the book is subtly introduced. John V. Marsch is a young anthropologist from Earth who comes to the mansion to question the narrator's aunt about her theories. Dr. Marsch has become intensely involved with the strange culture of the abos, and he is convinced that they have not

been exterminated (as the official opinion has flatly stated). He wishes to travel to the wilderness areas and search for the abos so that he can study them in their natural and unspoiled environment.

The narrator continues his strange tale of learning the secrets of the house, his father, and his true identity. It is told in intense and beautiful language, which captures that special awe and sense of mysticism that surrounds the world of a child.

The second novella, "A Story by John V. Marsch," seems to be an attempt by Marsch to reconstruct the original world of the abos before the coming of the colonists from Earth. The story is told through the viewpoint of an abo called The Sandwalker. It is a pastoral, idyllic picture of a primitive people who live close to the land. There are petty conflicts with various abo tribes who all bear the names of the topographic regions which they inhabit—The marshmen, the meadowmeres, and the Shadow children. The names of the characters and their unity with nature suggests the culture of the American Indians.

Within the novella, Marsch seems to intimate that Dr. Veil's hypothesis is indeed correct. One of the members of the Sandwalker's tribe is called the Old Wise One. He is somehow different from the others, and he speaks of crossing the stars to come to the world of the abos, and has somehow escaped death or replacement. Marsch's attempt to portray the abo culture seems muddled and deliberately unclear. Many questions are raised to which no answers are provided. It is a deep, nebulous account that forces the reader to interpret and draw conclusions on his own.

"V.R.T." is last of the three novellas,

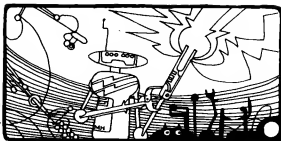
and it is the most intriguing of the three. It is presented as a jumbled collection of notes, diaries, and tapes of John V. Marsch. The fragments are being investigated by a military officer. The reader learns that Marsch has been arrested by members of the fascist government of Saint Croix and has been imprisoned. Marsch claims that he is innocent of any crime and he is never told the nature of his alleged offense.

The novella is purposely disjointed, and is at times interrupted by actions of the military officer. It is this fragmentation that forces the reader to patiently piece together all the separate incidents about Marsch's travels through the wilderness before he was arrested. Also in this novella, stated matter-of-factly, are references to characters and incidents that were mentioned in the previous two novellas. The reader senses that Wolfe is making implications of considerable significance; but at times the prose turns inward and becomes so circular that their meaning is lost.

It is difficult to digest the book as one entity, as a novel; and I'm not exactly sure it is intended to be. The three novellas are so different from one another, both in style and content, that it requires close and careful attention on the reader's part to make the entire work flow coherently. There are many themes running through the book which Wolfe seems to touch upon, make intense for a brief period, and then drop to move on to still other themes. One of the major ideas seems to be the search for true identity in a complex and hostile environment. The young boy who narrates the first novella is a strange, wistful individual who must fight the attempts of his guardians to keep the

(continued on page 129)

## ...OR SO YOU SAY



*Letters intended for publication should be typed, double-spaced, on just one side of each sheet, and addressed to: Or So You Say, P.O. Box 409, Falls Church, Va. 22046.*

Dear Ted:

I stopped writing letters of comment to magazines some time ago—I've got more urgent things to take up my time. However, before I close my mouth forever, I'd like to mention something that turned up in the letter column of the July *AMAZING*. Cy Chauvin says, in a letter, "I don't think Scott Edelstein meant that the story wasn't science fiction so much as it wasn't very good sf."

I have never met Cy Chauvin. I have never talked to him on the phone. I have never corresponded with him. I never even *thought* of corresponding with him. So how the hell does he know what I mean?

I meant what I said: the story was *not* science fiction. As for the question of quality, I think it's one of the best things you've done, and I've read it over and over several times, enjoying it more each time.

My definitions have changed since then, and I no longer draw any kind of boundaries on fiction—all fiction

is fantasy, and that's that. Your story was a good, entertaining one, and I don't want any longer to play the game of "let's-see-which-pigeonhole-we-can-fit-this-into."

Nor do I want to have to state my opinions twice. I mean what I say. Not what Cy Chauvin or anyone else *thinks* I say. Okay? From the horse's mouth only, from now on.

SCOTT EDELSTEIN  
1917 Lyttonsville Road  
Silver Spring, Md. 20910

*Let me see, now: "Growing Up Fast In The City" is not science fiction, but it was good and entertaining, and, like all fiction, is fantasy. Have I got that right? Well, I'm glad you enjoyed it enough to want to reread it. In the end, that's the real test of any story, no matter what label one puts on it.—tw*

Dear Ted,

I have two main points to make in this letter:

Point one concerns the number of pages in your magazines. The last page in each is labeled "130"—unless the last page is classified advertisements, in which case the page two pages before it is labeled "128". In either case, the potential buyer is supposed to get the



idea that he is getting 130 pages worth of magazine for his 60¢, right? Except that the first page of print is labeled page "4". (I wonder if anybody notices this except for grubby penny-pinchers like yours truly.) Anyway, it's the general principles that I'm zeroing in on here. Doesn't it strike you that calling your cover page 1 is just a little bit dishonest, huh? Admittedly, the other science fiction magazines (excepting Ejler Jakobsson's) do the same thing. But does that make it right? Before offering a justification, please keep in mind that this practice is a deception of your buyers and subscribers as to the quantity of pages they're buying, no matter how small and unintentional it may be. It's a quibble I admit, but small disagreeable things like this can take a lot away from my enjoying your magazines.

Point two is a little bit bigger quibble. I read with interest your answer to J. R. Yearwood in the July issue of *Amazing*. You told him (as you've said often before), "I believe in an honest package." Let's take another look at this "honest package". Let's suppose that there's this guy in the corner drug-store looking over the newsstand rack, and his eye is caught by the gorgeous cover of the July *AMAZING*—the very issue out of which I took your quote. In the corner is this huge sun. In the center is this crashed spaceship. What does it say on it? "National Geographic Society". A very intriguing situation. Our hypothetical friend wants to know more about it. So he buys a copy. After all, what magazine would have its contents totally unrelated to its cover? Okay, everybody can now laugh, because *Fantasy & Science Fiction* and the magazines edited by Ted White do

it often. Our friend will find nothing in there concerning what that cover promised. The poor snook!

Get the point, Ted? Undoubtedly you can parade out all sorts of excuses for these practices if you want. Still, it's a little hypocritical, don't you agree?

By now you've probably got the idea that I'm thinking that you're some sort of unscrupulous scoundrel or something. Quite wrong. I've brought up these points because I think that you've probably never thought of them. I got the idea from reading your magazines that you'll either answer my points to my satisfaction or else raise your practices to an acceptable level.

My two suggestions are: 1) Begin numbering your pages from the first page of the first of your contents. (The way it's organized now, that will be your editorial); 2) Make sure that your covers illustrate some segment or something out of either a story or feature of that issue it's on.

I've just been a regular reader of your magazines since last November's *AMAZING*. (I missed the December *FANTASTIC*.) Did you go through all this before?

JACK LE MOINE, JR.  
53 Cosmic Lane  
Richland, Wn.  
99352

*Yes. We publish a 130-page magazine, of which one page is the cover and another four or five are devoted to advertising (the tip-in cigarette ad in recent issues is a free bonus). The rest is stories and features. Check your average non-sf magazine and I think you'll find that between one-third and two-thirds of the contents are adver-*

*tising. I don't think that further justification is required on that point. As for our covers, I've pointed out before that whenever possible we try to have the cover illustrate the story, but that our first criteria is to have an attractive and appealing cover. Our cover paintings tell the reader that ours is a science fiction magazine, and, hopefully, tell him something about the nature of our magazine—by inference if in no other way. That is, we have tried to publish attractive, tasteful, colorful covers which reflect the same taste which editorially guides the magazine. If this be "hypocrisy," make the most of it.—tw*

Dear Mr. White:

Everybody seems to be spending a great deal of time in letter cols recently attacking/defending Heinlein. Both in fan and prozines he seems to be a focal point for all those who would decry the artistry of a writer if his political orientation and philosophy as shown in his work is distasteful and disturbing to the reader/reviewer. He is the horrible example of a male chauvinist, "racist", militaristic strain of thinking and thus is subject to all kinds of in-temperate and wild eyed attacks. To establish your political credentials as one who is in the new stream of thinking and thus liable of receiving sudden status all you do is vehemently attack R.A.H. (That last sentence is not directed at Russ, she certainly is skillful enough writer not to need to use such tactics, even though I am still trying to decide what the hell parts of *And Chaos Died* mean.)

This ideo-philosophic stress in many areas even leads to quite skillful reviewers (this is Russ) losing any ca-

capacity of being able to look at works with distasteful contents in basic assumptions and notice anything besides those assumptions—such as craftsmanship. This constant sneering/raging at Heinlein seems to be based on the fact that RAH has been practicing personal-ideological writing for years and doing it better than anyone on the "Left" can. How irritating. All this comotion at least disproves one critic of Heinlein's work (Ellison) basic notion—RAH certainly isn't irrelevant.

Now that my ideological spleen has been vented I can discuss what I intended to—the magazine. It is considerably improved from its lowly state before you became editor; the improvement is even noticable since I saw my last issue. (About 8 months ago—another distribution hassle. Couldn't find a new copy but if I ever want 50 year-old torn cover copies I'm set.) The improvement is especially evident in production values. The new cover stock is beautiful and the ink unlike the days of reprint glory when you had to wash your hands every ten pages actually remains on the paper.

What is on that stock has improved too. The new cover policy and logo adds some class to the shelf package. The Todd and Bode cover was both distinctive and eye-catching.

The best facet of the mag has to be the features however. *Clubhouse* is very useful and quite interesting, at least to me. I wonder how many poor innocent children have been seduced into fanzines and fandom by it. I know at least one mag (*Speculation*) reported a large response from the review. *Science*. . . is usually interesting and so phrased that even a law student who

almost flunked high school chemistry can understand it. The most interesting feature has to be the letter col. It is long, frequently abrasive and the first thing I turn to. It is nice to see an editor who frequently publishes letters that actually disagree with him. Your editorials also serve a purpose, usually concerned with SF rather than how to save the world (although there have been some regrettable exceptions), they are more than just billboards for the contents.

The weakest part of the mag has to be the short fiction. Your serials and longer pieces are usually at least good but some of the other and shorter work definitely shows that you pay less than the competition. "Freedom Across the River" was rather bad and "Smile-away" worse in the July issue. And although "The Unknown" was pretty good (I like Anvil anyway) it wasn't up to his usual standards. Rotsler and especially Shaw were good however. (I have got to get the first half of "Other Days. . .").

All in all it is a much better magazine since you took over.

M. A. LINNEMAN  
133 Lisbon Avenue  
Buffalo, New York

P.S. I have just read the *Dialectic of Sex*. At least *Skylark of Valeron* was fun.

*You can't win 'em all . . . for instance, I recently received a letter from a reader of our companion magazine, FANTASTIC, in which the reader was incensed that Fritz Leiber would give Heinlein's new novel anything less than a total slam. Speaking solely for*

*myself, I grew up reading Heinlein, from age nine on. For many years he spoke more directly to me than any other sf writer, and when I tried my hand at a science fiction "juvenile" I wrote as "Heinleinesque" a book as I was capable of writing. Yet, I have been disappointed by everything Heinlein has written since Stranger in a Strange Land. My major complaint has not been ideological (he and I parted company there some years earlier) but literary: to me at least Heinlein's writing and plotting skills have noticeably deteriorated over the last decade, and I found his latest novel unreadable. Frankly, I'd much rather enjoy Heinlein's work than not; I regret that as time has progressed, he has deprived me of this opportunity.—tw*

Dear Ted,

I think that you missed the point about Mondo-Con and Star Trek Con. Gail Burnick and Al Schuster may not be the top egoboo collectors of all time . . . but their cons were damned effective. I attended both (as well as NyCon III, for that matter), and of those three, I enjoyed the NyCon the least.

If an egoboo-getting con is so poorly run that no one enjoys it, is that better than a con that was put on for the money (so long as the price was reasonable) that goes off well despite the fact that over 1,500 people more than were planned for showed up . . . as in fact happened at Star Trek Con? (By the way, the fact the Schuster sells porn has nothing to do with his ability as a con organizer). Frankly, I think the quality of the con is more important than the reasons for putting it on.

KEN SCHER

3119 Mott Ave.

Far Rockaway, NY 11691

*I'm told that my passing editorial mention of the Star Trek Con and the Mondo Con has many New York area fans in an uproar, but yours is the only letter I've received on the subject. The*

*quality of the conventions in question will have to be determined by someone else; my point was that the trend is to putting on conventions for the profit of the organizers and that this "commercialization" is unlikely to have any long-term benefits for the sf community.—tw*

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## MERE ANARCHY (continued from page 45)

which had been my home for so many solitary years. Years of solitude and freedom. Freedom? Or anarchy? Whatever lay before me I knew it wouldn't be the same. I had a responsibility now, one I'd never

shouldered before. I looked back at Norma. She smiled a wistful smile, and I smiled back. Enough of mere anarchy. Hello to freedom.

—WILLIAM C. JOHNSTONE

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## JUPITER PROJECT (continued from page 108)

knowledge—anybody like that can handle whatever comes their way, eventually.

Man wasn't made to turn tail and run back to his home. He was made to wander, to stick his nose into things. Without that he'll bore himself to death.

I didn't know what was in the future, but I did know one thing: I wasn't going to get bored.

"John!" my father called. "We're loading up."

I freed my magnetic anchors and went to help.

—GREG BENFORD

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## FUTURE IN BOOKS (continued from page 124)

truth of his identity away from him. Sandwalker, the abo warrior of the second novella, embarks upon a truth-seeking journey that ends in ambiguity. In the third novella, John V. Marsch investigates his own consciousness while imprisoned in a cold, insensitive government prison.

The eventual fates of all the characters are not fulfilled. The entire book is a great open-ended experiment that forces the reader to extrapolate. There are implications beneath the surface that show Wolfe commenting on racism, fascism, ignorance, etc., but the

conclusions are left up to the individual reader.

With the exception of "The Island of Doctor Death and Other Stories," I have found Gene Wolfe's works to be filled with fine, fine prose, but lacking the necessary focus to completely communicate an idea to the reader. I don't feel that Wolfe has committed that error in this book, because he has provided the reader with enough concrete material to construct a real world. The style is highly literate; and the ideas are sophisticated and handled with sensitivity. This is SF for the thinking reader.

—Thomas F. Monteleone

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